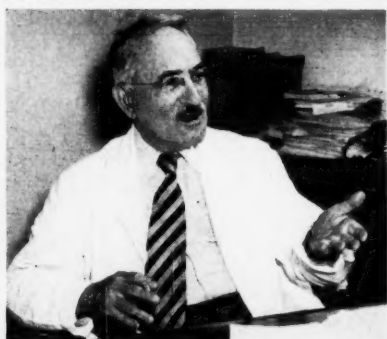


Chemical Week

December 6, 1952

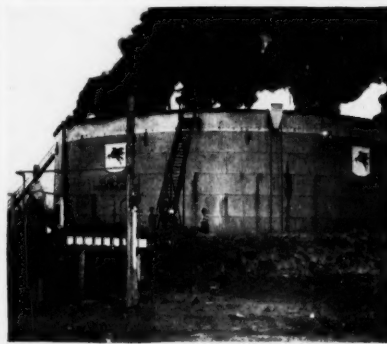
Price 35 cents



▶ **MCA sizes up industry's progress, problems, prospects at semi-annual conference p. 12**



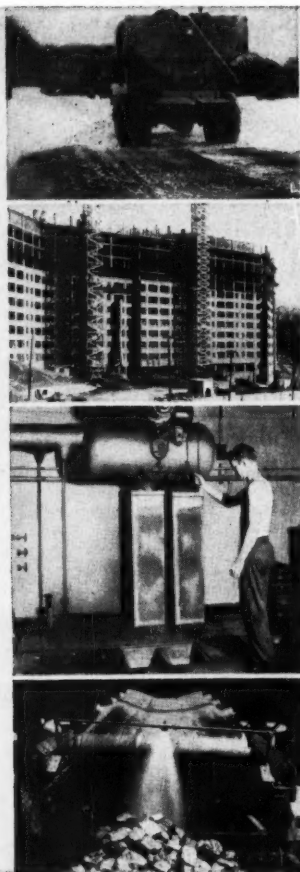
▶ **Selman Waksman looks ahead, points to four big jobs facing antibiotic researchers . . . p. 28**



▶ **Now we're making clothes insect-repellent; first trial will sop up 250,000 gallons p. 42**

Help your customers sell their customers; that's how plastics maker boosts his sales . . . p. 48

▶ **Cool by churning; that's the nub of a new way to snuff solvent fires p. 50**



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Chemical Week

Volume 71 Number 23

December 6, 1952

OPINION	2
NEWSLETTER	7
BUSINESS & INDUSTRY	11
RESEARCH	28
SPECIALTIES	40
DISTRIBUTION	47
PRODUCTION	50
MARKETS	53
BOOKLETS	60

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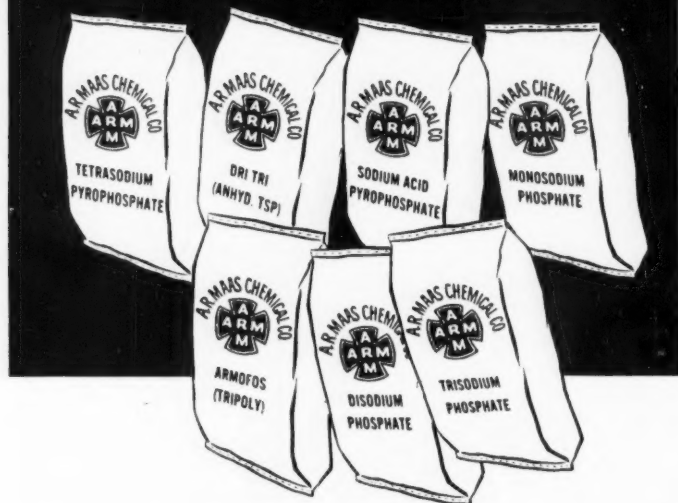
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OPINION

Silliness no Crime

TO THE EDITOR: I have followed with instruction and amusement your news items and editorials about chlorophyll—its uses and abuses. . . . I suppose you've seen the enclosed comment from the Oct. 31 issue of *Printers' Ink*, but I'm sending it along just in case you haven't.

JOHN R. CARLSON
New Brunswick, N. J.

Indeed we did see it, Reader Carlson, and we think it warrants excerpting. Thanks in any case for sending it to us. Below are portions of it.—Ed.

"It has tried, Heaven knows it has tried, but the Federal Trade Commission just can't find any evidence that will support a substantial case against the users of chlorophyll.

"Hopes have now faded away that the American Medical Assn. will come up with something to show that claims currently made for chlorophyll-laden products are exaggerated.

"It cannot, of course, be argued that chlorophyll is dangerous. . . .

"It cannot be argued, either, that chlorophyll is a hoax. There isn't any good evidence either way. Medical men will agree, for instance, that chlorophyll-loaded toothpaste occasionally heals a cut in somebody's mouth. It also occasionally clears up a case of bad breath.

"Nor can it be argued that the public is spending fabulous sums of money for it. It hasn't added any measurable amount to the consumer price index; the Federal Trade Commission hasn't even bothered to estimate how much prices of products containing chlorophyll have been boosted.

"The only argument available is that it's all sort of silly. Silliness is not an offense under any statute known to the FTC. . . ."

Feed Soil, Not Plants

TO THE EDITOR: . . . Your editorial (Nov. 5) is as extreme . . . condemning organic farming as some of the extremists on the organic side are in condemning chemicals.

I believe the basis of the controversy is this: Followers of Leibig be-

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: W. A. Jordan, Chemical Week, 330 W. 42nd St., New York 36, N.Y.

lieve in adding plant food to feed the plant . . . those of Mulder believe in feeding the soil. The modern fertilizer industry seems to pay more attention to the first. . . .

Those who would feed the soil have the better of the argument, because the raising of a crop is not like putting out a new model automobile . . . it is a continuing process . . . has its effect on the soil. . . .

. . . The contentions of organic farmers and "down-with-chemicals zealots" . . . don't quite fit all people who believe in organic gardening . . . some are chemists who run large acreages . . . are more interested in preserving their land than in mining the soil to cash in on one crop . . . the heck with the next year.

You say organic farmers assert "all chemicals are unnecessary for crop production." That is not correct. . . . Plants need nitrogen, phosphorus, potash. Phosphorus is derived from rock phosphate . . . and that is available when organic matter is present. Potash is likewise available if organic matter is available. . . . Nitrogen balance can be maintained by feeding livestock.

The average farmer loses—in dollar value—by mishandling and waste of manure . . . a value equal to that of his oat crop.

. . . I doubt an organic farmer has much objection to the use of urea, but there could be lots of objection to ammonia or sodium nitrate.

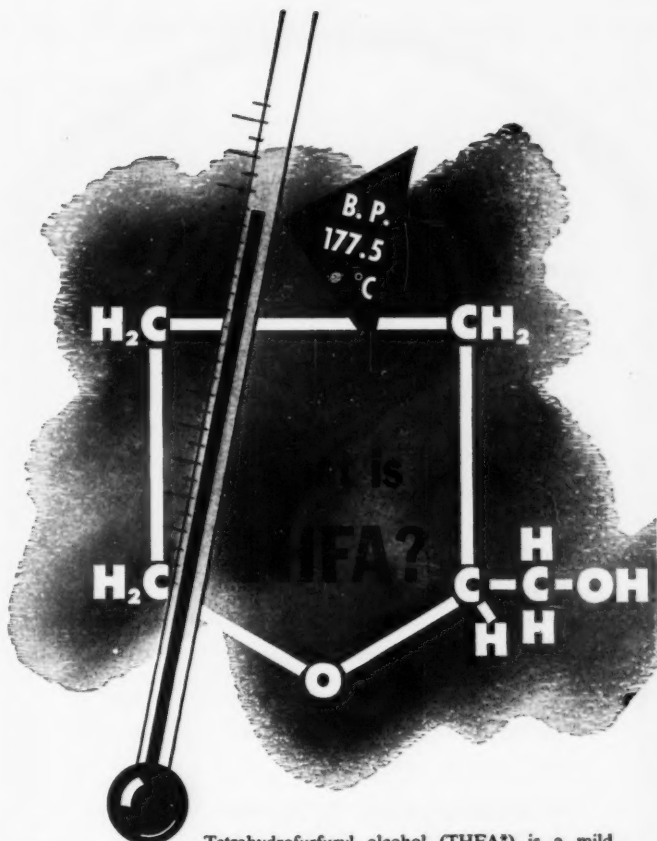
. . . By adding purchased fertilizers crop yields can be increased . . . but this usually runs down organic matter in the soil and, in time, there is trouble. . . . I noticed the usual weasel words: "Commercial fertilizers . . . do not, if properly applied, injure the soil." That's very nice in the prologue . . . but the organic farmer objects that lots of those commercial fertilizers are not properly applied; and there is little evidence . . . companies worry about it.

In regard to insecticides, many are deadly poisons . . . cumulative . . . accumulate in the soil. For one crop, they make money—but the long term is bad. . . .

. . . I feel there is more money to be made in feeding the soil . . . and that takes organic matter. . . .

HAROLD N. SIMPSON
Biochemist
Oak Park, Ill.

We appreciate your views, Reader Simpson, but we don't feel that they refute anything we said. In no respect did we say that organic matter in the



Tetrahydrofurfuryl alcohol (THFA*) is a mild, pleasant smelling, high boiling primary alcohol containing the characteristic heterocyclic furan ring.

Its reactions are generally those of a primary alcohol. (A reaction chart is yours for the asking.) In addition to the usual reaction characteristics of a primary alcohol, THFA can be made to undergo reactions involving the ring such as ring opening to open chain compounds which in some cases may be recycled to form other important ring compounds.

USES

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3. Solvent for dyes, resins and other interesting compounds. Those having solvent problems in connection with styrene, vinyl acetate, vinyl butyral, cellulose acetate, ethyl cellulose, nitrocellulose, "A" stage phenol-aldehyde resins and rosin would do well to investigate this solvent.

PROPERTIES OF THFA (PURE COMPOUND)

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Specific gravity, 20/20 °C.	1.064
Refractive index n 20/D	1.4505
Flash point (open cup) °C.	75-80

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Write for Technical Bulletin 87-B



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OPINION

soil was undesirable, or that it served no useful purpose. (On the contrary, we cited the pros.) What we did emphasize as illogical—and without factual foundation—is the contention that organic matter alone is all-sufficient for crop production and that organic fertilizing yields plants with weird, wonderful and superior properties.

Correspondingly, we opined that the assertion that all chemicals are worthless is equally specious—be they used to feed the soil or the plant—Ed.

Unscrambled Legalese

TO THE EDITOR: . . . In your Newsletter (Nov. 22) you mention among Canadian tariff reductions: "Lube oil additives (not made in Canada)—from 20% to 10%." . . .

This is misleading. . . . Lube oil additives not made in Canada will continue to be dutiable to the same extent as previously. The actual phrasing of the Order in Council: "Material, of a class or kind not made in Canada, when imported by manufacturers of additives for lubricating oils, for use exclusively in the manufacture of such additives in their own factories. . . ."

This means that raw materials for the exclusive production of additives in Canada, and not produced in Canada, are allowed to enter at 10% duty.

. . . I think it is due your readers that the precise phraseology be publicized. . . .

K. A. DANSKIN
The Lubrizol Corp.
Cleveland, Ohio.

MEETINGS..

American Institute of Chem. Engrs., annual meeting, Cleveland Hotel, Cleveland, O., Dec. 7-10.

American Pharmaceutical Mfrs. Assn., mid-year meeting, Waldorf-Astoria Hotel, New York, N.Y., Dec. 8-10.

Amer. Institute of Chemists, "Young Chemists' Meeting," Hans Jaeger Restaurant, New York, N.Y., Dec. 11.

The Chemical Market Research Assn., Plastics Industry meeting, Palmer House, Chicago, Ill., Dec. 11.

Society of Cosmetic Chemists, semi-annual meeting, Biltmore Hotel, New York, N.Y., Dec. 11.

Amer. Society of Mechanical Engineers and Society for Advancement of Management, plant maintenance conference, Cleveland, O., Jan. 19-22.

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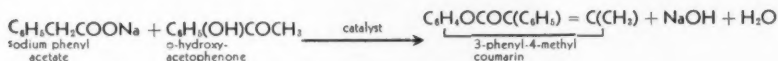
While the full potential of PHENYL-ACETIC ACID in synthesis has not been explored, a reactive methylene group has made it a valuable general organic intermediate. It is well-known as a penicillin precursor and has been mentioned as a plant fungicide and hormone. Other suggested uses are as an intermediate for drugs (antispasmodics, sedatives, antiseptics, and anticoagulants); perfume aromatics; and insect repellents. Kay-Fries also manufactures alkali metal salts of phenylacetic acid, both anhydrous and in solution.

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NEWSLETTER

It had the certificate earlier (CW, July 26; Aug. 9), but only last week did Allied Chemical & Dye reveal definite plans to build a \$23 million plant near Hopewell, Va., to make a nylon-type fiber (nylon 6) based on caprolactam. The product integrates well into Allied's setup since the raw material is made from phenol (to be made by Allied at Philadelphia), ammonia and hydrogen (both produced at Hopewell) and sulfuric acid.

National Aniline Division will build and operate the plant, sell the product. Planned output: 20 million pounds a year of staple and continuous filament yarn—and some plastic molding material.

Production will get under way in about two years.

But if the government loves—by granting fast tax write-offs— it also chastens—by instituting investigations.

Right now the soap makers are wondering whether the government will "file and forget" the proceedings of the grand jury investigation that ended last week in Newark, or use them as the basis for a civil anti-trust suit alleging collusion on prices.

Just as an earlier grand jury had done in 1941, the current panel looked over the government's evidence, then declined to indict the soapmakers and their organization, the Association of Soap and Glycerine Producers, Inc. This year's probe, lasting three months, was more thoroughgoing than the 1941 check-up.

There's a far-reaching precedent for turning a grand jury's refusal to indict for criminal action into a civil suit: That's the approach the government followed in the Du Pont-General Motors-U. S. Rubber suit new being tried in Chicago.

There's a new name and a new process in the "white carbon black" picture: Godfrey L. Cabot, long-time major producer of black carbon blacks, will soon introduce Aerosil, a silica powder for use in rubber, textiles specialties, paints, lacquers, vinyl resins and cosmetics.

Unlike similar materials, which are made from ethyl silicate, Aerosil is produced by burning silicon tetrachloride in hydrogen and air. Cabot will bring it in from Germany, where it is made by Degussa (Frankfurt). The German firm has been making it commercially for several years, but during the past two years Cabot and Degussa have been quietly collaborating under a patent and know-how exchange agreement.

Aerosil now sells for 80¢-90¢ a pound. But Cabot expects to make the product here as the market builds up, foresees a 30%-50% price drop when new technical wrinkles are incorporated into the domestic plant.

While Aerosil is coming westward, other chemicals will travel eastward to Europe under Mutual Security Administration authorizations.

- Yugoslavia will buy 600 tons of toluene from U. S. suppliers;
- France has been authorized to buy up to \$1,155,000's worth of medicinals and pharmaceuticals, including \$280,000's worth of antibiotics.
- Italy can spend up to \$1 million for phosphates and other types of fertilizer materials.

NEWSLETTER

Schwegemann Bros., the perennial gadfly on fair trade's flanks, will be haled into court again. The New Orleans retailer, already sued by Eli Lilly for selling its products below the fair-trade level, now faces a possible injunction restraining it from selling Bristol-Myers products (Ipana, Sal Hepatica, Mum, Vitalis) at lower-than-established levels.

Bristol-Myers went to the federal district court last Saturday, asked for an injunction on the basis of a contract between the drug firm and other Louisiana retailers.

Recess of the Federal anti-trust case involving members of the Du Pont family and six corporations has been granted until Jan. 5, due to the illness early this week of Willis L. Hotchkiss, chief government prosecutor.

Good news to commercial testing laboratories is the Air Force Air Materiel Command's impending order permitting them to test purchased items. Until now these tests have been made at Air Force laboratories at government expense—and often at the expense of considerable waiting.

Now sellers will pay for the testing, but they'll get their business out of the way faster. Another bottleneck—having to ship goods to the Air Force's Dayton, Ohio headquarters, will be broken, too.

The move will also get the government out of routine commercial testing, leaving the Air Force to concentrate on testing which requires its own specialized equipment.

The National Science Foundation is going to take a long, hard look at the Paley Commission recommendations, is setting up a panel of fifteen geology, mining and geophysics specialists to advise on policy and to consider "the need for an inventory of current research in exploration techniques and the formation of a committee to make such an inventory."

Included on the panel: Arthur D. Little's Stevenson, Kennecott Copper's Boyd, Climax Molybdenum's Bunker.

Solvent extraction of soybeans got the nod over expeller extraction to the extent of a \$500,000 RFC loan, made last week to Galesburg (Ill.) Soy Products Co. The loan (seven years, 5%) will enable the firm to convert its plant, provide additional working capital.

The arm of the government will also be revealed next week when the Department of Agriculture and the Public Health Service join forces to sponsor a Food and Nutrition Institute, where food laws will get a going-over from FDA's Crawford, and National Research Council's Longenecker.

Their subjects: limitations of consumer food protection under existing laws, and nutritional implications of food additives.

Here are bits of news with more-than-meets-the-eye implications: Six million tons of high-purity limestone—suitable as a chemical raw material—have been found near Austin, Texas.

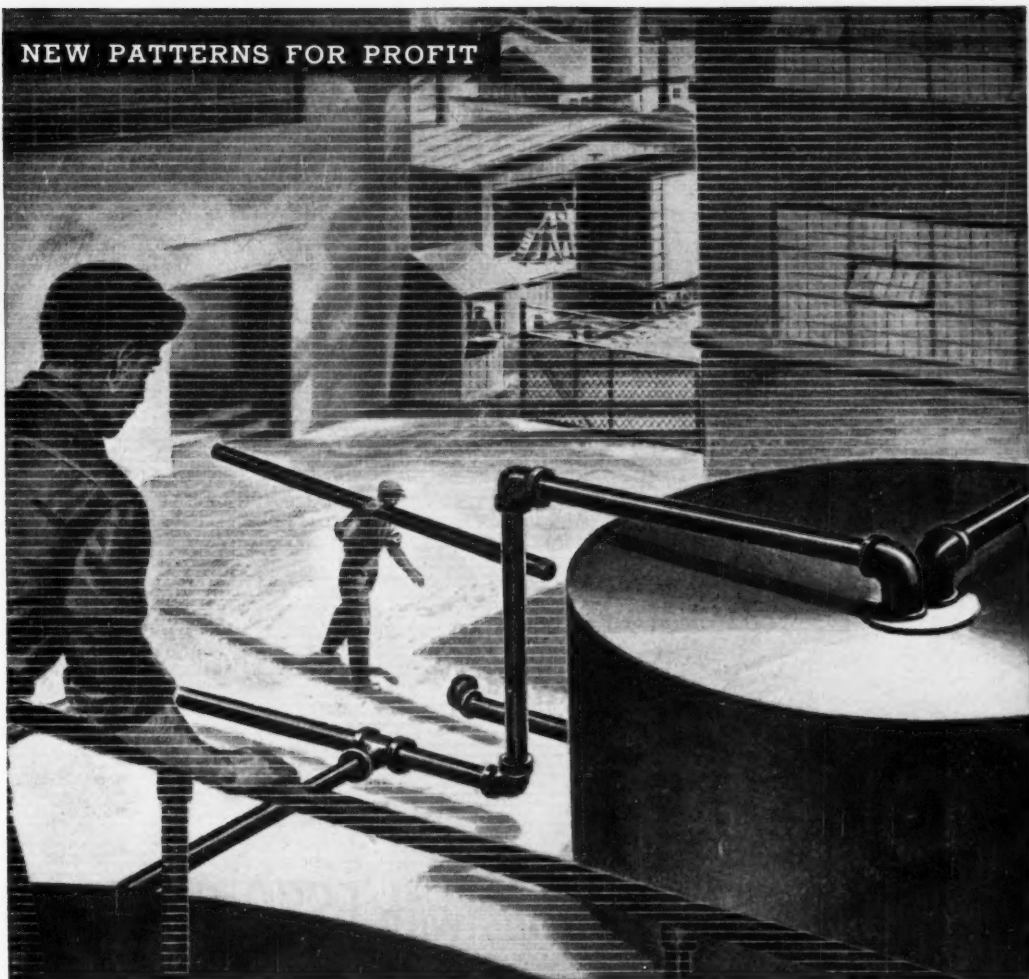
A German paint firm, International Cleff Co. (Duesseldorf), will operate a 56,000-gallons-a-month plant in Canada.

Du Pont has pulled out of Duperial, the Du Pont-I.C.I. joint venture in Argentina. A similar "divorce" may take place in Chile.

Noranda mines will build a \$4 million sulfur, sulfur dioxide and iron sinter plant near Cyanamid's Welland plant.

... The Editors

NEW PATTERNS FOR PROFIT



Can this "pipe dream" make money for you?

A remarkable new pipe has been developed that's virtually "corrosion proof" for nearly all uses. It's made of glass fibers combined with a polyester resin.

The new pipe is so light a twenty-foot length with a four-inch diameter can be lifted overhead with one hand. This pipe can be ordered to meet your own needs for bursting pressure and rigidity. When ordered for special service, it can be made with polyester resins that will withstand heat up to 500° F.

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This chemically resistant pipe is only one application of glass fiber-polyester laminate made with **Monsanto's styrene monomer**. This material is also used for a host of other products ranging from building panels to huge storage tanks. To find out if this tough laminate can set a new pattern for profit with new products for your business, write to **Monsanto Chemical Company, Department A, Texas Division, Texas City, Texas.**

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BUSINESS & INDUSTRY

Long Winter's Work

"Holed up" in the Federal Court House in Chicago, some 40 lawyers and clerks are settling down to spend a stormy winter studying the operations of the allegedly monopolistic "tremendous industrial trinity"—Du Pont, General Motors, and U.S. Rubber Co.

Nationally prominent attorneys for the defendant companies and their major stockholders spent about five days delivering opening statements in which they denied virtually every aspect of the government's contention that members of the Du Pont family used their shareholdings to compel G.M. and U. S. Rubber to trade with the Du Pont company.

"Attack on Expansion": John M. Harlan, member of a noted New York law firm and apparently the "quarterback" of the team of 34 defense attorneys in this case, asserted that the suit is really an attack on "bigness" in industry, and that the antitrust charges were only a "camouflage."

Three government attorneys, headed by Willis L. Hotchkiss, are up to bat this month and next to strive to prove that the Du Ponts "have spread their monopoly over a larger segment of American industry than ever has come under control before."

Declaring, "This is monopoly run amok," Hotchkiss opines the situation required this suit to prevent "a headlong rush to monopoly" in the United States. He's asking the court to order Du Pont and its principal stockholders to sell their holdings of G.M. and U. S. Rubber stock.

In Spotlight Again: This suit, described by the government as the biggest antitrust case in history, puts District Judge Walter J. La Buy back in the legal limelight. La Buy, a federal judge for more than eight years and a state circuit court judge for 12 years before that, won praise from the U. S. Supreme Court three years ago for his decision on another big antitrust case, U. S. vs. Yellow Cab Co. Rulings on that case have been cited in arguments on the current suit.

In that case, the government's main charge was that the Checker Cab Manufacturing Corp., as owner of stock in certain taxicab companies, exercised a restraint on interstate commerce by requiring those companies



JUDGE LA BUY: Back in the limelight.

to buy all their new cabs from CCM. When the suit first came to trial, some six years ago, La Buy granted the companies' motion for dismissal on the grounds that the government's petition failed to state a cause of action.

The government appealed, and the Supreme Court reversed the ruling. The suit then went back to Chicago for trial, and Judge La Buy decided that the evidence did not bear out the government's charges. Again the government filed an appeal, but this time the Supreme Court upheld the District Judge.

Able, Patient, Careful: "The judgment," wrote the Supreme Court justices, "is supported by an opinion, prepared with obvious care, which analyzes the evidence and shows the reasons for the findings. To us it appears to represent the considered judgment of an able trial judge, after patient hearing, that the government's

evidence fell short of its allegations."

On somewhat parallel lines was the history of the Petrillo case in 1946 and 1947. James C. Petrillo, president of the American Federation of Musicians, was accused of trying to force radio station WAAF to hire more musicians than it needed, an offense under the Lea (anti-Petrillo) Act. Judge La Buy first dismissed the charges, calling the Lea Act unconstitutional. After the Supreme Court upheld the constitutionality of the law, Petrillo was tried and acquitted.

La Buy also presided at the 1950 trial of Preston Tucker, automobile manufacturer, and seven of his associates in the short-lived Tucker Corp. The government charged the defendants with mail fraud and violations of the Securities Acts, but they were acquitted.

One coincidence in the Yellow Cab case was that Pierre du Pont and John J. Raskob, former treasurer of the Du Pont firm, were among the major stockholders involved in CCM's alleged conspiracy. Judge La Buy couldn't be convinced that a "CCM conspiracy" existed. The question now is: Will he view the "Du Pont conspiracy" in the same light?

Closer Together

W. R. Grace & Co. and Davison Chemical Corp., whose operations (CW, Nov. 29) have been meshing more and more closely, now may become a single company.

Grace, which now owns almost 20% of Davison's stock, has told the Davison board of directors it may decide to propose a merger of Davison into Grace via an exchange of stock.

The matter is still hedged with if's, and's and but's:

(1) Grace directors have to make up their minds on whether or not to make a formal offer. This could come within four weeks.

(2) Davison's directors would have to approve it and recommend that their stockholders do likewise. The directors, though, plan a "thorough study" of Grace's business and affairs; they don't feel the study could be completed before next July.

(3) Davison stockholders still would have to approve.

(4) Assuming that everybody approves, it would take at least through next September to effect the merger of the companies.



ON A SILVER PLATTER: Glance back for those who looked ahead.*

More of a Good Thing

The Manufacturing Chemists' Association's second annual winter conference at New York's Hotel Statler last week proved that the members liked the kind of industry panel sessions the "new" MCA (CW, Dec. 22, '51) established last year. Evidence: Registration was more than 650, a 20% hike over 1951 attendance.

After a morning of "looking ahead" to problems of raw materials and financing, the registrants broke up into various groups attending panel sessions on executive development, employee relations, International Labor Organization, industry-education cooperation; technical developments and safety (see p. 50); and foreign trade, labeling, traffic and transportation, and packaging (see p. 47).

Before they turned their attention to these specialized sessions in the afternoon, attending executives did a lot of luncheon-time looking back to the warnings given by Irving Trust Co.'s Roland P. Soule and Eric Hodgins, a member of the President's Ma-

terials Policy Commission and a member of *Fortune's* board of editors.

Money Costs: Soule's advice to management: In planning, don't forget that common equity capital—both new common stock and retained earnings—has risen greatly in cost, and that it won't get cheaper in the foreseeable future. Even "good grade industrial companies" find it almost six times as expensive as borrowed capital; though prewar the cost was only twice as much.

These are the steps he said managements might take under today's conditions:

- Raise sights in estimating what rate of return to expect from new projects of certain types.
- Recognize that a reduction in the cost of equity capital is one of the advantages of diversifying a business or otherwise improving the "quality" of its earnings.

* Flanking platter-holding George Merck, Du Pont's William Ward (L.) and Air Reduction's Charles Munson; rear, Allied's Fred Emmerich and Monsanto's A. T. Loeffler.

- Keep investors fully informed of their company's progress so that such progress is fully reflected in higher prices for their stocks and lower costs of their equity capital.

- Re-examine capital structures to keep the best balance between cheap, risky borrowed capital and safe, costly equity capital.

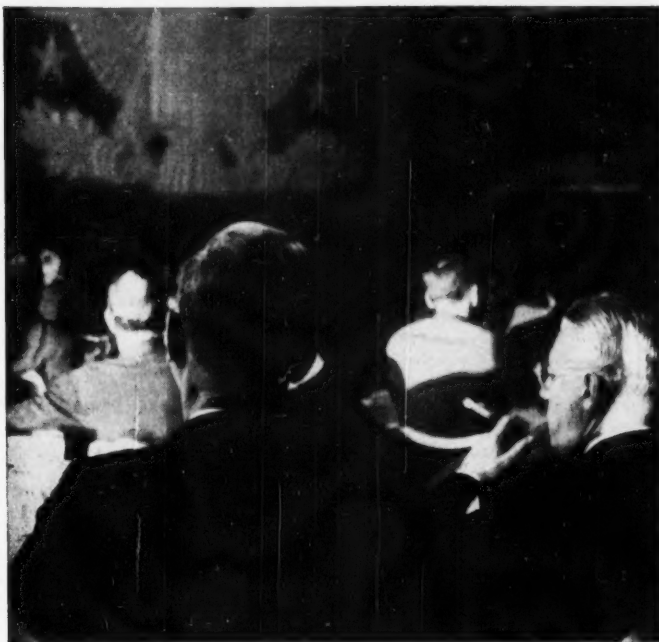
No Self-Sufficiency: All industries during the next 25 years will have to emulate the chemical industry's foresight in anticipating long-term demands and lining up raw materials to produce tomorrow's products, Hodgins said in discussing our increasing consumption of natural resources. The chemical industry's freedom from traditionalism and its active technology have been the principal factors behind its volume production of low-priced goods with great efficiency and so little drain on exhaustible resources, according to Hodgins.

But technology alone, he concluded, cannot solve the problem. Rejecting self-sufficiency as a policy, Hodgins urged a vast expansion of imports of all sorts into the United States as the preferred path toward a better materials supply for this country. He said that a policy of protection, necessary in the nursery stage of growth, is not needed for the most powerful industry in the world such as the chemical industry is today.

Count Yourselves In: At the banquet that capped off the full day, industry men got another word of advice from one who should know. T. Keith Glennan, president of Case Institute of Technology and until he recently resigned, a member of the Atomic Energy Commission, proposed that a national association of atomic industries be formed to work closely with AEC, the Joint Congressional Committee on Atomic Energy, and other government agencies. Today, said Glennan, only industry, which "built the atomic energy program,



BUSY CLOAKROOM: 20% hike in attendance.



BANQUET MESSAGE: No plutonium platters.

carries on nearly all of the work today under government contract . . ." has no liaison through which its interests are fairly represented to AEC as are those of the military, the general public and the scientists.

The aim of such an association—established voluntarily and without government urging or subsidy—would be "development and utilization of the peaceful applications of atomic energy in accordance with the best traditions of the American system of free competitive enterprise."

For industry cannot expect AEC nor any other government agency to bring in projects "on a plutonium platter," warned Glennan, and it must take the initiative in bringing its talents to development of atomic energy.

One Glance Back: Though most of the emphasis of the conference was on current and future problems, and there is no doubt that the "new" MCA is here to stay, there was at least one look back into the past. Both Merck's George Merck and Monsanto's Bill Rand (*in absentia*) were honored with silver platters and citations for their many years of service as officers and members.

But as one member commented, this was hardly looking back. For "it has been men like George Merck and Bill Rand who saw the need for an

active MCA." Last week's meeting certifies them as vindicated prophets.

Silicone Spotlight

Been wondering how the silicone business is doing? Some curiosity on this point has been dissipated by disclosure that Dow Corning net sales have swelled by more than 233% in its past two fiscal years, and now are running close to \$15 million a year.

These figures, previously enshrouded in the lumped-together data of the consolidated annual reports by the two joint owners (Corning Glass and Dow Chemical), became generally known this week following distribution of a prospectus for sale* of 104,104 shares of Corning Glass Works common stock.

Because the sale of silicone products (including resins, oils, greases, rubbers, high-temperature electrical insulating compounds and other industrial and consumer items) has mounted so rapidly, Dow Corning has run into particularly harsh tax rates. For the fiscal years ending May 31, net sales were \$6,314,046 in 1950;

* The sale was a complete success, according to the underwriters, with all shares being sold at \$67.50 in less than two days. Most of the stock sold was formerly owned by descendants of the late Amory Houghton, who helped establish the glass firm in 1851 and whose great-grandson and namesake is present chairman of the board.

\$12,737,945 in 1951; and \$14,842,616 in 1952. Net income for these years: \$675,936; \$2,033,693; and \$1,380,647.

Apparently indicating a firm belief that demand for those products will keep on the uphill path, expansion projects have been authorized to the amount of some \$10,452,000 in estimated construction costs. Property, plant and equipment additions for the current fiscal year are expected to cost \$6.5 million.

These figures seem to give certainty to what has been pretty obvious in recent years: Silicone products manufacturing has become one of the brightest bands in the rainbow.

FOREIGN

Antibiotics/U.S.S.R.: The production of antibiotics such as penicillin and streptomycin is expected to be almost doubled in 1953. Short supply has been attributed to lack of coordination between research groups.

Chemical Pulp/Finland: The International Bank for Reconstruction and Development has loaned Finland \$3.5 million in Swedish currency for expansion of its wood products industry. Equipment will be used to increase production of chemical pulp, newsprint, and other wood products.

Sulfuric Acid/Yugoslavia: A new electrolytic zinc plant being constructed in Sabac, Slovenia, will produce 22,000 tons of sulfuric acid as a by-product of zinc operations. Initial production is planned for 1954.

Perlon/West Germany: Vereinigte Glanzstoff AG, Wuppertal, largest West German producer of perlon, plans to increase its production by 60 to 70% by March 1953. Other producers have similar expansions planned. Over 90% of German perlon textiles are exported.

Synthetic Rubber/Brazil: A French group plans to erect a synthetic rubber plant in Campos R. J. The plant would use butadiene made from sugar cane-derived alcohol. Incidentally, styrene use in Brazil may see additional expansion. Koppers is considering putting up a plant at Sao Paulo for production of polystyrene.

Poland/Brazil: Poland will export products including aniline dyes, potash fertilizers, and other chemicals in return for Brazilian cotton, iron ore, and carnauba wax through a trade-and-payment agreement effective for one year.

Trend to Southwest

Simultaneous with preparing for the Manufacturing Chemists' Association's semi-annual meeting (page 12), MCA's staff has completed a break-down by states the fast tax write-off certificates issued to chemical companies.

The list (which includes certificates issued by the Defense Production Administration through Oct. 15) appears herewith.

Most obvious trend shown by the figures is that the chemical industry is moving south and west. The Gulf

Coast area received \$706 million out of the \$2.3 billion worth of certificates issued. The Middle Atlantic states, traditional center of the chemical industry, received \$297 million. In 1947, the Atlantic region accounted for 29.3% of the total number of chemical plants, the Gulf states, 7.5%.

Of the \$706 million attributed to the four Gulf Coast states, \$655 million was definitely allocated to specific states, \$51 million went to plants in the general area.

manufacture of finished chemical products from alumina processed from Arkansas bauxite.

COMPANIES. . . .

Plant sites in the news included Morgantown, W.Va., and Ironton, Ohio:

- Certificates of necessity for a \$170 million aluminum plant have been issued to Olin Industries, Inc., of East Alton, Ill. In picking a site, Olin will choose between Morgantown and a midwestern location.

Olin still has several problems to answer before it becomes the fifth producer of aluminum (CW, Nov. 29). First, where will it buy its bauxite raw material? Second, where will it get its power needs? Morgantown, as a location, would be advantageous on these points. Olin reportedly is negotiating with Pittsburgh Consolidated Coal to set up generating facilities near there. Alumina shipments could be received at Newport, and shipped in empty coal cars which otherwise would be deadheaded back to West Virginia.

- The Dow Chemical Co. has purchased a plant owned by Slagel Chemical Co.. It is located at Pine Grove, O., near land previously purchased by Dow.

Construction on Du Pont's new chemical plant to be located south of Beaumont, Tex., is being delayed by red tape involved in the U.S. Army Corps of Engineers easements, stipulated by Du Pont in selection of the site more than a year ago.

Arapahoe Chemicals, Inc., has formed a wholly-owned new subsidiary, Arapahoe Special Products, Inc., to take over production, operation and sales of all hazardous processes and materials. A new plant on the parent company's home site is being erected for the subsidiary company's operations. Completion date is early 1953.

Acrylic
Organics

Ammonia,
Nitrogen

NEW ENGLAND

Maine		
New Hampshire		
Vermont		
Massachusetts	1,109	
Rhode Island		
Connecticut		

MIDDLE ATLANTIC

New York	5,170	146
New Jersey	15,178	
Pennsylvania	8,187	4,167

EAST NORTH CENTRAL

Ohio	5,355	829
Indiana		
Illinois	9,408	10
Michigan	13,556	5,024
Wisconsin		

WEST NORTH CENTRAL

Minnesota	472	
Iowa		
Missouri	142	28,056
North Dakota		
South Dakota		
Nebraska		
Kansas		15,513

SOUTH ATLANTIC

Delaware	1,531	
Maryland	645	
D. of Columbia		
Virginia	11,900	
West Virginia	12,535	2,503
North Carolina	1,776	
South Carolina		
Georgia		
Florida		

EAST SOUTH CENTRAL

Kentucky	25,923	400
Tennessee		
Alabama	1,029	6,150
Mississippi		22,328

WEST SOUTH CENTRAL

Arkansas	215	1,930
Louisiana	67,055	79,453
Oklahoma	3,052	
Texas	205,371	

MOUNTAIN

Montana	845	
Idaho		
Wyoming		
Colorado	2,800	
New Mexico		
Arizona	18	
Utah		
Nevada		

PACIFIC

Washington	337	7,629
Oregon		
California	8,276	15,505

POSSESSIONS

Alaska		
Hawaii		

NOT CLASSIFIED ELSEWHERE

TOTALS	401,885	189,643
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EXPANSION. . . .

Chlorine: A new chlorine plant will be built in Muscle Shoals, Ala., on a 538-acre site now being condemned by the U.S. Government.

Aluminum: Production has begun at Alcoa's Rockdale (Tex.) works. Upon completion, the installations at Rockdale will include a smelting plant with four potlines for producing aluminum from refined aluminum ore. The Rockdale Works is part of a \$350 million expansion program.

Hydrogen Peroxide: Buffalo Electro-Chemical Co.'s new hydrogen peroxide plant in Vancouver, Wash., has begun production. Says Becco: The plant will fill all West Coast requirements for the chemical.

Phosphate Rock: Plans for mining phosphate rock near Bartow, Fla., are being completed by Armour Fertilizer Works. Rock will be used in the manufacture of fertilizers at the company's Atlanta plant.

Cold Rubber: Production of cold rubber at the U.S. Rubber Co.'s plant at Port Neches, Tex., should begin about the first of January. At the height of production, expected by the end of February, the plant will be turning out 7,500 long tons of cold rubber per month.

Ethyl Benzene: Koppers' new ethyl benzene plant at Port Arthur, Tex., is about to go into operation.

Cellophane: Du Pont plans to expand and improve its cellophane manufacturing facilities at its Spruance plant at Richmond, Va. The new project will start next spring and will be completed late in 1954.

Alumina: Aluminum Ore Co. will construct a plant at Bauxite, Ark., for the

Carbon	Synthetic Fibers	Chlorine, Alkalies	Cyclic Organics	Oxygen, Other gases	Pharma- ceuticals	Plastics, Resins	Sulfur, Compounds	Miscellaneous	Totals
		222						1,395	1,395
								450	672
			2,708	292		4,577	75	1,223	75
				65	18,342	856			9,909
									65
									19,198
									Total 31,313
4,752		10,078	15,056		39,806	3,347	2,716	8,033	89,105
			12,078	11	18,752	6,674	7,850	9,828	70,370
891		11,637	69,494	7,587	15,277	19	5,328	14,545	137,131
									Total 296,606
		22,399	6,369	5,346	152	14,516	32	65,901	120,899
			5,563		4,804		1,720	5,394	17,481
		13,068	12,900	17,038	910	318	18,208	10,587	82,447
1,045		45,953	18,043		25,454	14,310	1,438	25,937	150,760
			1,200	26		75			1,301
									Total 372,888
			7,280				680	6,499	14,931
			7,186		18,415		957	5,455	60,211
			3,970						3,970
		1,433					3,566	3,233	23,745
									Total 102,856
	6,453							463	8,447
		9,150	6,326				4,000	2,559	22,680
							737		737
498	36,929	12,565						7,316	69,209
	9,025	12,214	16,108	877	3,015		106	12,920	69,301
207		1,390		42				225	3,640
				178				1,048	1,048
	88,500						1,976	13,875	14,053
								18,481	108,957
									Total 298,071
8,456	22,426	6,500				5,319		7,846	45,988
	44,291	4,928	763	101		6,381	3,940	3,845	50,841
		8,125	228	257				6,638	66,717
				208		453		11,977	34,966
									Total 198,512
		313							2,460
10,758		10,080	15,280	66			16,825	3,342	202,859
		7,046	483					2,432	13,032
12,688		65,996	45,432	9,916		35,129	16,663	43,893	435,088
									Total 655,439
				182				9,305	10,332
								16,450	20,802
						6,975	4,352	13,737	20,712
									2,800
1,011						554		590	2,154
				49					67
			1,760			6,203		6,615	14,578
			1,968					572	2,540
									Total 73,986
		3,180	490	74			892	11,889	24,491
		1,498				57		794	2,348
		2,940	32,690	941	147	36,791	7,415	4,989	109,694
									Total 136,532
				75					75
			243						243
		29,000	65	47,745	746			29,544	107,060
40,306	207,624	279,715	283,683	91,076	145,820	142,554	99,476	389,845	2,271,582

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BUSINESS & INDUSTRY

Engineer Utilization Checklist

DO YOU—

- ☐ Have an indoctrination program for engineers?
- ☐ Have a program for training supervisory engineers?
- ☐ Have your top-level engineering centralized, with authority and responsibility clearly delegated?
- ☐ Use engineers for non-technical work?
- ☐ Use non-engineering personnel—technicians, students, shop men—for routine jobs?
- ☐ Standardize and simplify engineering jobs so subordinate personnel can handle them?
- ☐ Seek engineers among women, retired engineers, non-citizens; hire consultants?

Stretching the Talent

Though the shortage of engineers is real, management can ease the manpower pinch by making better use of existing engineering staffs. That is the conclusion of the National Society of Professional Engineers in reporting on a 500-company survey* to determine how industry is meeting the problem. High on the list of ways to make the most of what you have is establishment of an internal organization in which top-level engineering is centralized. This may permit consolidation of some engineering departments, with attendant cuts in administration and clerical expense, and an increase in efficiency. Ground-level work, the report advises, can then be decentralized into departmental areas, but there should be established standard practices and specifications.

In such a setup, however, efficiency can result only if each engineer knows exactly what his responsibilities are, and to whom he is accountable.

On the Right Foot: Important in bringing new employees to peak value to the company is proper orientation. Yet a surprising large percentage of companies surveyed had no formal training programs for newly-hired engineers—both recent graduates and men with experience. The report strongly recommends training programs, and presents the one-year orientation program of a respondent company as a checklist of suggested steps.

* The report, *How to Improve the Utilization of Engineering Manpower*, available from NSPE, Washington, D.C. at \$2.00 (single copies).

Easiest way to increase, in effect, the number of engineers you have is to see that your men are not doing jobs that people with less training can handle. Among routine tasks engineers often perform but which are now being successfully assigned to non-engineers: drafting, designing, cost accounting, record keeping, market research, operation of experimental equipment and pilot plants, filing, requisitioning, and handling details with shops.

Sources of such non-degree-holding personnel reported in the survey include college students who have not completed their courses, technicians (trained either by the company or in technical schools) and shop personnel.

The report also discusses auxiliary sources of engineering talent such as women engineers, retired engineers, research organizations and consultants which many companies are now using to good advantage.

Keep 'em Happy: A good proportion (42%) of the companies surveyed said that turnover among engineers plagues their efforts to maintain an efficient staff. The view of most companies (81%) is that such benefits as hospitalization and insurance help to reduce turnover, but they are declining in importance since most large companies offer them.

Incentives—not benefits—win loyalty, according to the survey, and this is their order of relative importance: (1) opportunity for advancement; (2) stability of employment; (3) chance to receive extra training; (4) essential industry; and (5) profit-sharing plan.



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December 6, 1952 • Chemical Week

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SOLVENTS from O&C

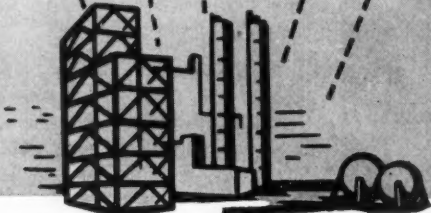
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LABOR

Union Vote Varieties: Latest bargaining elections conducted by NLRB in chemical plants fail to show any clear-cut post-Eisenhower-election trend. In one plant, two AFL unions were chosen; a CIO union won a second plant election; and in a third, the employees decided not to link up with any union.

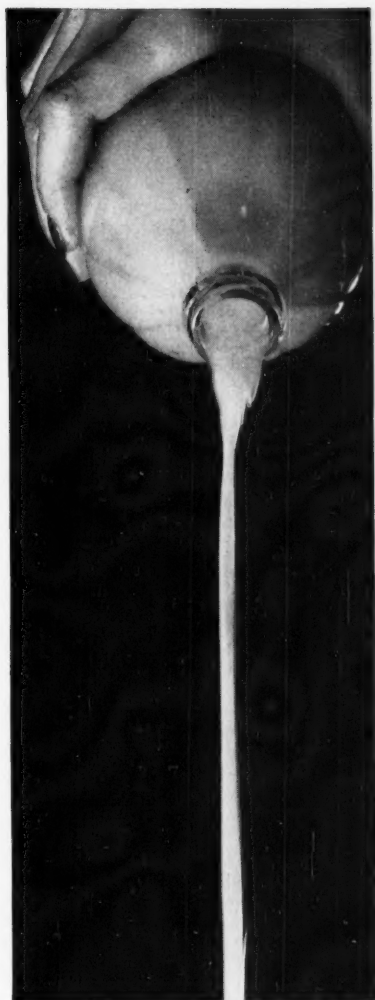
- If no objections are filed within the five-day limit, the NLRB will issue collective-bargaining certificates to the International Chemical Workers Union and the International Association of Machinists, both AFL, on the basis of last week's run-off election among Goodyear Engineering Corp. employees at the Hoosier Ordnance Works in Charlestown, Ind. Among about 3,200 eligible employees in the production unit, ICWU received 1,965 votes; 821 voted for "no union"; 18 ballots were void and 3 were challenged. Of the 170 persons in the maintenance unit, 113 voted for IAM and 45 voted against.

- Employees in the Denver plant of Julius Hyman & Co., which was purchased last summer by Shell Chemical, have chosen the Oil Workers International Union (CIO) as their bargaining agent. Results: OWIU, 227; AFL Operating Engineers, 1; independent union, 49; no union, 11. There were about 360 persons in the bargaining unit at the time of the election, but it's understood that Shell plans to expand to a force of about 600. Assisting in the organizing campaign was Melvin Faith, president of OWIU Local 5 at Shell's chemical plant in Shell Point, Calif., who took a leave of absence from Shell for this work.

- For the second time in five years, employees of Diamond Alkali's plant near Houston, Tex., have voted to stay aloof from labor unions.

More Wage Hikes: New settlements between unions and companies in the chemical processing industries include four more contracts calling for wage increases.

- Union employees at three Sharp & Dohme plants in the Philadelphia vicinity have voted to accept a one-year contract providing for a 6¢/hour wage boost now and an additional 2¢ rise next May 20. The employees, members of United Gas, Coke & Chemical Workers (CIO), also are to get a 50% cut in their share of payments on group insurance policies. Two cents of the immediate increase will be subject to WSB approval. The plants are in Philadelphia, Glenolden and West Point, Pa.



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• WSB has okayed a 4¢ rise for 230 employees of International Graphite & Electrode Corp. at Niagara Falls, N. Y. The agency stated that this increase would "bring the company's wage rates in line with those in the area performing similar work." Other pay hikes for Sunday and holiday work also will go to the workers, who are represented by Federal Local Union 23516, AFL.

• Textile Workers Union (CIO-CCL) has signed its first contract with Fiberglass Co. in Hamilton, Ont., with clauses calling for a 13¢ general wage increase and a company-paid group insurance plan.

• Also at Hamilton, Ont., United Rubber Workers (CIO-CCL) Local 113 has ended its 16-week strike against Firestone Tire & Rubber. Terms include an 8¢ wage hike and \$50 in lieu of retroactive pay.

• Columbia-Southern's alkali plant in Corpus Christi, Tex., needed about two weeks to get back into full production after the recent eight-week strike. Some of the 475 workers took other jobs and are not returning to the C-S plant.

Relations Out of Tune: There's not much discord in CPI labor relations as winter approaches, but in at least one case the jarring note is loud and long-drawn-out.

• Shots were fired at three automobiles carrying non-union employees out of the Jefferson Island Salt plant at Jefferson Island, La., where ICWU members have been on strike for more than 100 days following a job-classification dispute. On the same day, an explosion wrecked an unoccupied bus that had been used to take non-striking workers into the plant. Sheriff Nic DeRouen said it appeared that the shooting was intended only to "scare" the riders. The company's side of the original disagreement is that two older employees were transferred to other jobs; the union charges that the company is trying "to get rid of its older employees."

• Disregarding the advice of their officers, members of the AFL Atomic Trades & Labor Council at the Y-12 atomic plant in Oak Ridge, Tenn., have rejected a three-year contract that had been proposed by the operating company (Union Carbide) and accepted by the union's bargaining committee. That proposed contract called for a 10¢/hour increase; the union membership is asking a contract running to July 1, 1954, with a 15¢ rise. The President's Atomic Energy Labor Relations Panel has been asked to investigate.

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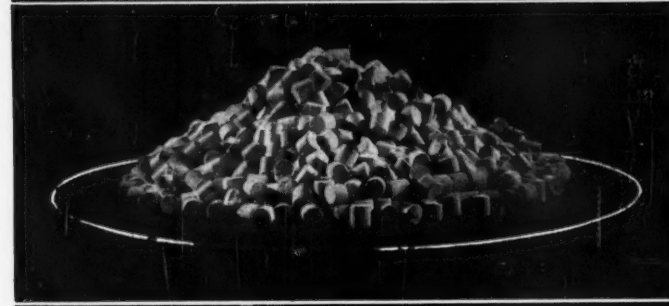
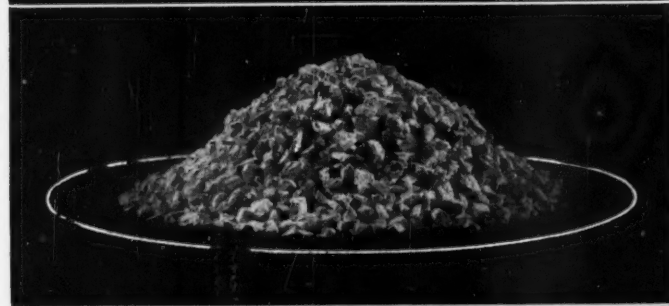
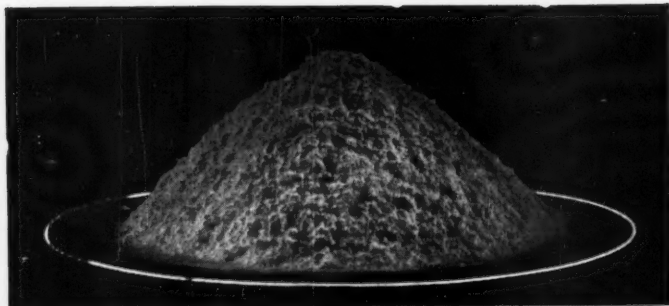
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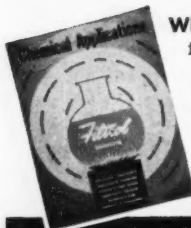
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• Also of possible retarding effect on the atomic program is the latest work stoppage in the Paducah, Ky., region. AFL Ironworkers, protesting the discharge of a disabled worker, walked off the job and caused a nearly complete cessation of work on the TVA steam power plant being constructed to furnish power for the atomic energy plant there.

New Day for Knight: O. A. (Jack) Knight of Long Beach, Calif., president of the CIO Oil Workers since 1940, has been re-elected along with Vice-President B. J. Schafer and Secretary-Treasurer T. M. McCormick. They were nominated at OWIU's 22nd annual convention in September, and were unopposed in the membership referendum conducted by an independent CPA firm. The firm reported that 20,962 OWIU members cast valid ballots. The union claims a membership of about 110,000, including about 25,000 in chemicals and petrochemicals. Knight, who received 18,216 votes, recently resigned as head of the NPA's labor office, in which he had served 16 months on a part-time basis, without pay.

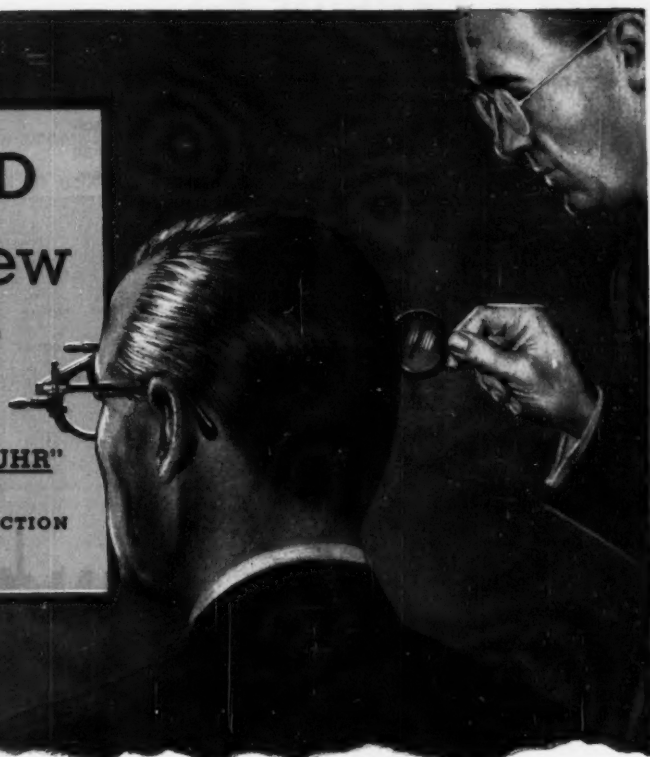
Texas Labor Laws: Bills for more stringent regulation of labor unions will be taken up by the newly elected state legislature soon to convene in Austin, Tex. One proposal is to make a labor union liable for damages resulting when its members fail to live up to a contract; another would set up a series of civil penalties for union acts that would be banned by a kind of state-wide anti-trust act.

• Also pertinent to chemical companies in the Longhorn State: Casualty Insurance Commissioner Garland A. Smith says workmen's compensation insurance rates will be up about 12.3% for chemical firms, starting this month. The emergency increase was granted because of "a rising accident rate and higher cost per claim." For all employers, the increase will average 17.9%.

LEGAL

Dye Chief Charged: A stockholder of United Dye & Chemical Corp., New York City, is asking the New York State Supreme Court to declare the company entitled to recover more than \$500,000 from a group that includes David S. Fischman, president of the firm. The stockholder, Irving Lesch, accuses members of that group of using funds of a United Dye subsidiary, American Dyewood Co., to buy certain property in West Virginia

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and then diverting some of those assets to their own use.

Ads Toned Down: The Federal Trade Commission is accepting a stipulation by Temington Products Corp., Elizabeth, N. J., that it will stop advertising that its insecticide device is approved by the U. S. Army. The company also agrees not to claim that the product sold under the name Fly Master, is an absolute and complete control of flies and other insects.

Bugs in the Law: In the FDA case, which now is being mulled over by the U. S. Supreme Court (CW, Nov. 29), Food and Drug Administrator Charles W. Crawford has warned that withholding the FDA's power to inspect food and drug factories might result in more instances like the 1937 "Elixir Sulfanilamide" episode in which nearly 100 persons died. He says that inspection of the finished products is not adequate, because in butter or cheese, "the fat from a bug blends completely with the fat from the milk." Attorney for the defendant Washington Dehydrated Food Co. holds that if this is so, the FDA should ask Congress for a more rigorous law.

Drug Shipper Curbed: Export license privileges have been denied to United Global Corp., New York City, and its owners, for a period of six months. The U. S. Office of International Trade charges them with having submitted false statements as to the ultimate consignee of shipments of antibiotics to Singapore.

KEY CHANGES . . .

Ivar N. Hultman: From vice-president and assistant general manager, to general manager, Kodak Park Works, Eastman Kodak Co., Rochester, N.Y.

William S. Richardson: From vice-president, to director and executive vice president, B. F. Goodrich Co., New York, N.Y.

C. William Hardell: To vice-president and manager, manufacturing, Sinclair Chemicals, Inc., New York, N.Y.

Charles S. Mitchell: To vice-president, Cities Service Oil Co. (Del.), Bartlesville, Okla.

Wilfred J. Mohr: To manager, manufacturing, Southern Latex Corp., Atlanta, Ga.

Ralph F. Phillips: To manager, development, Evans Research and Development Corp., New York, N.Y.

H. P. Partenheimer: To director, research and development, Mansfield Tire and Rubber Co., Akron, O.

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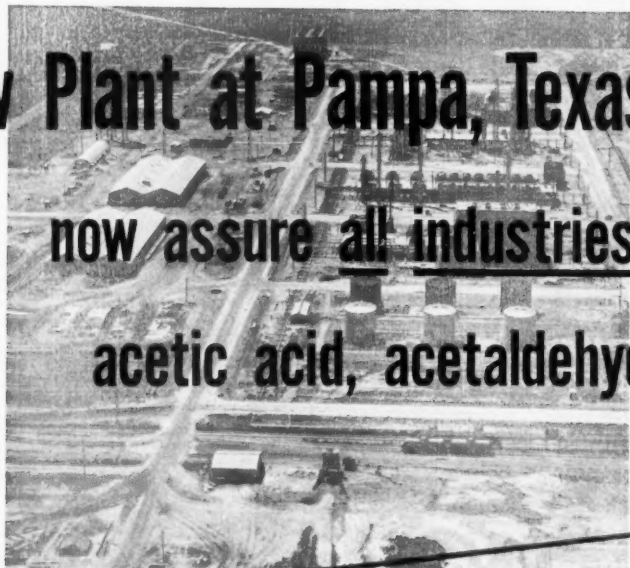
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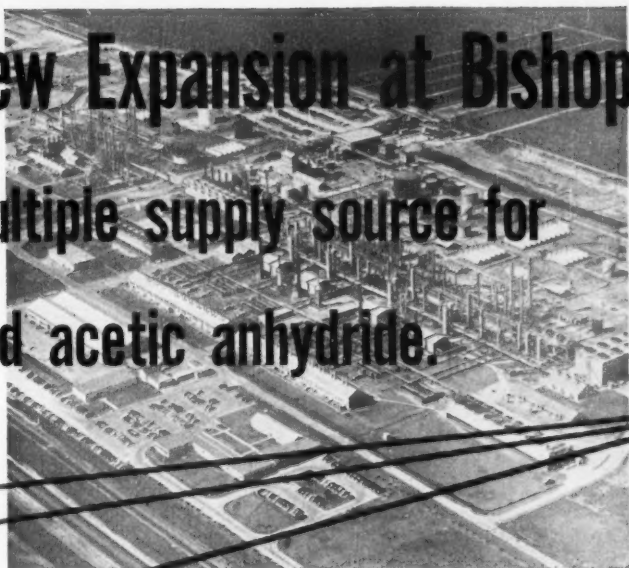
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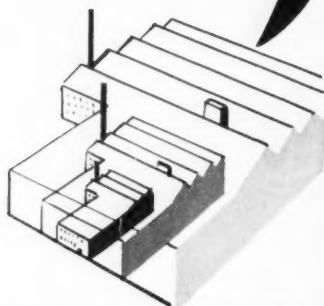
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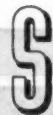
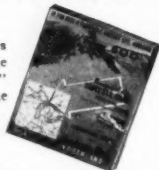
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RESEARCH



Four Worlds To Conquer

"... One of the most serious diseases that afflicts a person in my position."



Antibiotic research has traveled an arduous, but rewarding road from penicillin to erythromycin.* What the future holds is still largely a matter of conjecture. For the opinion of the man who added "antibiotic" to modern language, **CHEMICAL WEEK** journeyed to Rutgers University, called on Selman A. Waksman—winner of this year's Nobel Prize in medicine for his guiding role in the discovery of streptomycin.

CW found the Rutgers microbiologist bracing for a siege of what he terms "one of the most serious diseases that could afflict a person in my position—lecturitis." He speaks in Stockholm, Dec. 10 (accepting the Nobel award) and Dec. 12 (at the opening of Sweden's first streptomycin plant); Japan, Dec. 20 (before the Kitasato Institute); San Francisco, Jan. 15 (at Mt. Zion Hospital).

Then it's back home and to work.

* Newest commercial antibiotic, it was developed by Eli Lilly & Co., licensed to Abbott Laboratories and Upjohn Co.

Waksman doesn't envision any major disruption of his normal routine as a consequence of his newly acquired honors; "a little busier, that's all" is his guess.

Recognition and revenue for streptomycin to the contrary, Waksman's greatest contribution to science probably is his systematic microbial screening process which is now standard practice in the search for new antibiotics. In simple terms the screening method may be described as analogous to a many-step filtering process. Each "filtration" eliminates a useless fraction of a starting field of potentially valuable antibiotic-producing microorganisms. Finally, with luck, a clinically promising antibiotic is the net result.

Waksman calls his discovery of

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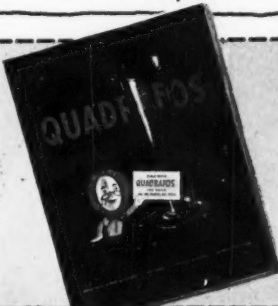
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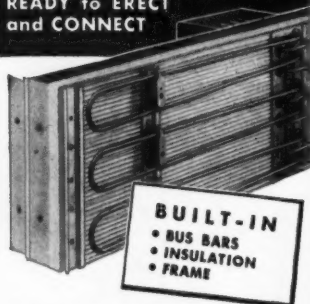
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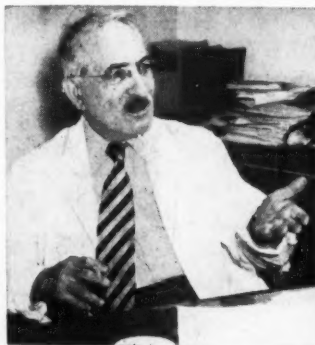
RESEARCH

streptomycin: "The story of the 10,000 microbes." His research group originally isolated 10,000 microbes, tested them for ability to inhibit pathogenic bacteria. One thousand, or

"Sooner or later we will find antibiotics to combat the viruses."

10%, came through the test. Waksman and his colleagues next tried to grow this group in cultures, found that only 100 could be cultured. Ten chemical substances showing antibiotic activity were extracted from these cultures. Streptomycin, one of the ten, was weeded out by tests with experimental animals.

Royalties on streptomycin are building Rutgers' spanking new Institute of Microbiology. They will be abetted in this work by the royalties from five plants (one in Italy) to manufacture neomycin, another of Waksman's discoveries. Some neomycin production



capacity has been in operation for the better part of a year (CW, Feb. 23). The Nobel Prize money, \$33,037, will also go for research.

Aside from the continuing hunt for substances to counter pathogenic bacteria, antibiotic research—in Waksman's estimate—will follow four major lines.

"The planter figures there must be something in the soil..."

Perhaps of greatest short-term importance is the development of antibiotics to offset the fungus threat. Strange as it seems, adds Waksman, antibiotics are responsible for the present fungus menace. Even harm-



ful bacteria produce antifungal substances. Consequently, he explains, when antibiotics destroy bacteria they also destroy these agents. "The fungi then have a ball for themselves while we play the tune," is Waksman's way of putting it.

Next comes the virus problem—more difficult because live animal hosts are vital for virus experimentation. Waksman points up the magnitude of the task, but is confident that "sooner or later we will find antibiotics to combat the viruses... we know that they (antiviral agents) exist." Ehrlich, a recent (CW, May 26, '51)

"The fungi then have a ball... while we play the tune."

Waksman achievement sparked high hopes that were dashed against the rocks of toxicity. But the antibiotic did have antiviral activity.

Then there are the neoplastic diseases (cancer) which, according to Waksman, are "still more difficult. We have hope for the antibiotics... sooner or later, something will be



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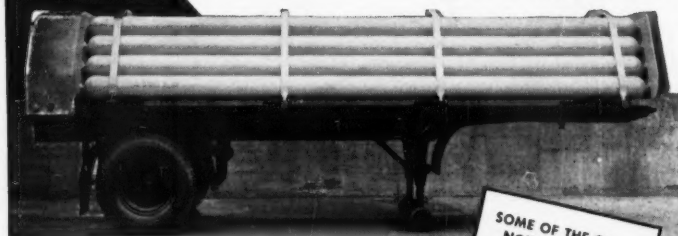
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RESEARCH

found." As of now, however, the prospects are not too hopeful.

Finally, there are the plant diseases. Antibiotics already have demonstrated their value in this field, will doubtless come into commercial prominence for such applications in the near future. The Rutgers microbiologist is enthusiastic about the agricultural possibilities of antibiotics, points out that "plant diseases offer totally different types of problems, but feels antibiotics can do "a beautiful job, act selectively on the cell.

"Do you know," he queries, "that



"... And you know, he could be right."

the browning of lettuce is caused by bacteria? By washing the lettuce in a very dilute solution of streptomycin, for example, we can keep it fresh and free of discoloration."

Discovering new useful substances is not the whole of antibiotic research. Synthesis of antibiotic substances and correlation of structure with activity are just two vital facets of study that are currently receiving a good deal of attention in industrial and academic research. Clavacin, a non-commercial antibiotic, and—of course—chloroamphenicol have been successfully synthesized, the latter on an industrial scale. Correlation of structure with activity has not fared as well.

The structures of aureomycin, streptomycin, terramycin, etc., have been determined; but so far no functional relationships have been established. "No characteristic group," explains the Nobel Prize winner. "...that's the reason they act differently." Moreover, Waksman is not overjoyed with the term "broad spectrum," opines, "the ideal antibiotic is selective in its action."

Years of probing micro-worlds haven't narrowed Waksman's cultural

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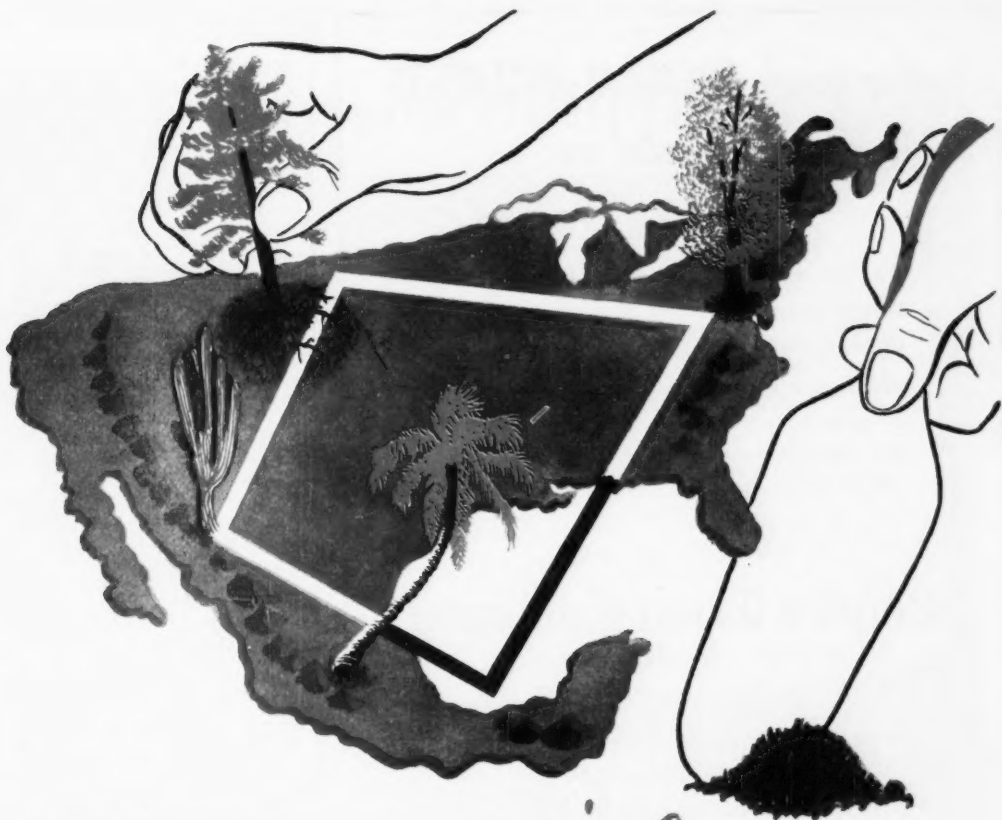
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December 6, 1952 • Chemical Week

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AN AUCTION

PROCESSING PLANT— THE REAL ESTATE and COMPLETE SOYBEAN PROCESSING EQUIPMENT

(Equipment piece-by-piece)

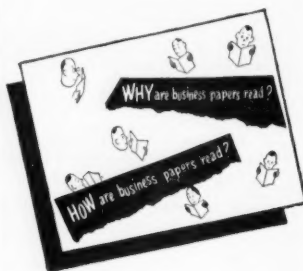
Mon., Dec. 15 at 1 P.M., HIAWATHA, KANSAS, (45 miles NW of Kansas City). **REAL ESTATE**—IDEAL FOR FEED MANUFACTURING, GRAIN ELEVATOR, FERTILIZER MANUFACTURING, HYBRID SEED CORN, GENERAL MANUFACTURING. Bldg #1, aluminum on steel, 42x80, joining is a 24x20 bldg, boiler room 20x18 joins with 100 hp natural gas boiler, adjoining too is a 20x17 bldg 45' high w/grain dump, legs, etc., 40,000 lb F.B. truck scale. Bldg #2, Butler steel 40x80 on rr spur; Bldg #3, Butler steel 40x140 on rr spur, 60,000 bu capacity. All bldgs have reinforced concrete floors, all city utilities, are in excellent repair, built in '48. 5 steel grain storage tanks 76,000 bu capacity w/overhead & underground conveyors from rr to bldgs & tanks. Total grain capacity 172,000 bu. Immediate possession. (Formerly Thomson Sora Mill.)

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RESEARCH

perspective or dulled his sense of humor. He likens his work, and the work of microbiologists throughout the world, to the fulfillment of an ancient prophecy of "salvation from the soil." And he can recall passages from the Bible to nail his point.

Waksman's laboratory is continuously receiving and investigating soil samples from all over the world, though he makes a point of advising "that we need go no further than our own backyards" for antibiotic-bearing soil. But soil parcels aren't the only professional offerings he has had. A native of India, inspired by Waksman's work, once offered himself for *in vivo* experiments.

The distinguished, graying scientist who sparked the discovery of the "first effective antibiotic found for use against tuberculosis,"* delights in recounting a letter from a Belgian planter in Africa which told of natives curing certain illnesses by eating soil. "The planter figures there must be something in the soil. And you know," says Waksman with a twinkle in his eye, "he could be right."

Arrival: Diaminopyrimidines apparently have arrived on the threshold of a career as antimalarials. Capitalizing on more than a year of intensive research (CW, Sept. 8, '51), Burroughs, Wellcome and Co. has just introduced a new antimalarial drug in England. It's called Daraprim, is 2,4-diamino-5,4-chlorophenol-6-ethylpyrimidine. Large-scale experiments with the new drug in the Belgian Congo showed that a weekly dose of 25 milligrams was enough to offset symptoms of the disease. And the new antimalarial is claimed to produce "no unpleasant after-effects."

Burroughs, Wellcome (Tuckahoe, N.Y.) plans to make the drug available here, if—and when—National Research Council gives its blessing.

Non-Profit Dollars: National Science Foundation reports that non-profit institutions received \$297 million from the federal government in fiscal year 1951, and \$341 million in fiscal 1952 for scientific research and development work. Figures show that about half the funds came from Defense Department, another 35% from Atomic Energy Commission. Breakdowns show a smaller fraction of total funds tagged for basic research in 1952 than in 1951.

Labeled: Radioactive Products, Inc. (Detroit, Mich.) has recently added

* As stated in his Nobel citation.

• Davison Bulletin •

Check for application AVAILABLE FOR THE FIRST TIME Organic Silicofluorides

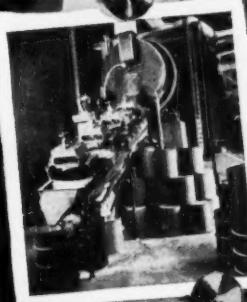
Davison's Research and Development Department has devised a method of commercially producing a series of silicofluorides which have previously been known only as laboratory curiosities. Now available:

Methylamine Silicofluoride ($C_2H_7N \cdot SiF_4$)
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Preliminary use research has led Davison's technical representatives to believe that there are many varied applications for these products.

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Commercial forms of silica gel available differ primarily in pore size, surface area, and apparent bulk density. These differences, in addition to the variations produced by surface treatments and particle sizing, have resulted in a series of finely divided silicas adaptable to diversified uses. Many of these grades are now available for anti-blocking and flattening plastic sheeting.

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RESEARCH

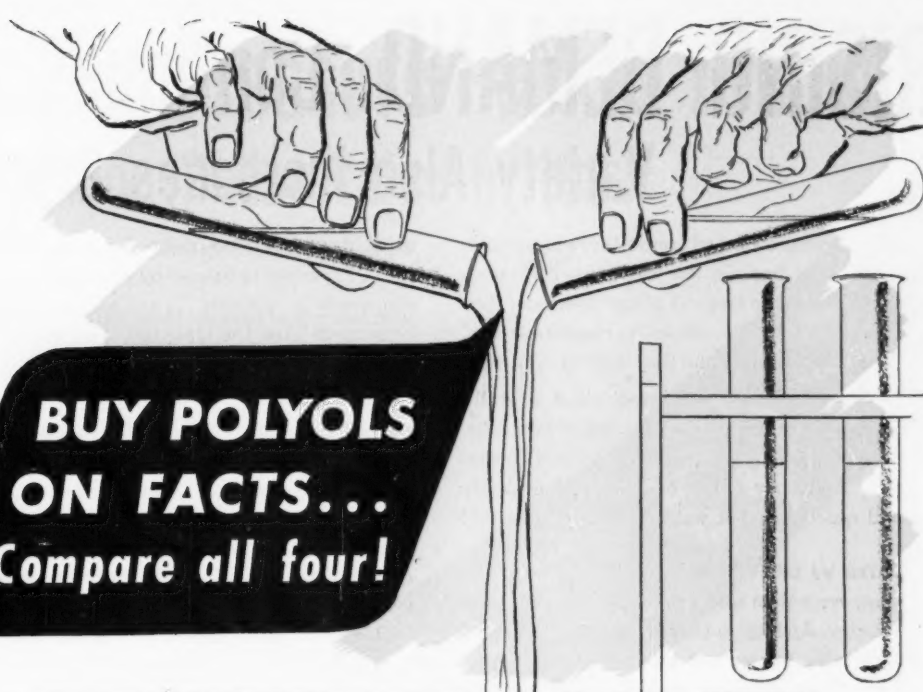
ring-labeled progesterone to its growing stock of tagged steroids. The product is available in specific activities of 10 microcuries per milligram.

ACTH Purified: Researchers of Armour and Co. (Chicago, Ill.) have succeeded in isolating pure adrenocorticotrophic hormone—better known as ACTH. More than three years was required for the task. The pure substance is described as a white, water-soluble powder. Molecular weight of the ACTH protein is now pegged at about 3,500—a good deal smaller than the molecular weight originally estimated. Pure ACTH will provide a standard against which therapeutic preparations of the hormone can be measured. Preliminary studies indicate that the physiological effects of the pure material are identical to those produced by a purified form of ACTH now on the market.

Muddy Solution: A Navy research project has produced information which may go a long way toward solving the growing atomic waste disposal problem. Atomic Energy Commission looks upon the long-lived radioactive isotopes (with half-lives in the thousands of years) as one of the most important atomic age problems. Aside from controlled storage in underground tanks, there is now no means of safely disposing of the radioactive wastes from atomic reactors.

AEC says that even such drastic measures as sealing the material in a metal container, embedding it in cement and dumping it into the ocean does not guarantee that the hot material will not become a hazard in future years. The Navy thinks it has the answer: California Academy of Sciences, while engaged in a Navy-sponsored oceanographic survey, discovered that wide areas of deep mud flats form the ocean bottom near the California coast. The Navy thinks that radioactive wastes, sealed in drums and sunk into the mud, will be kept from doing harm. When the drum disintegrates, the radioactive wastes are absorbed by the mud. Says the Navy: "This will avoid contaminating huge areas of the sea . . . which would happen if the drums disintegrated on a rocky or hard sand bottom."

Up and Down: Dow Chemical Co. researchers recently pinpointed phenol coefficients of chlorophenols. Germicidal activity increases through the mono, di and tri series, decreases in the tetra and penta compounds. Reason: limited solubility of the higher chlorinated products.



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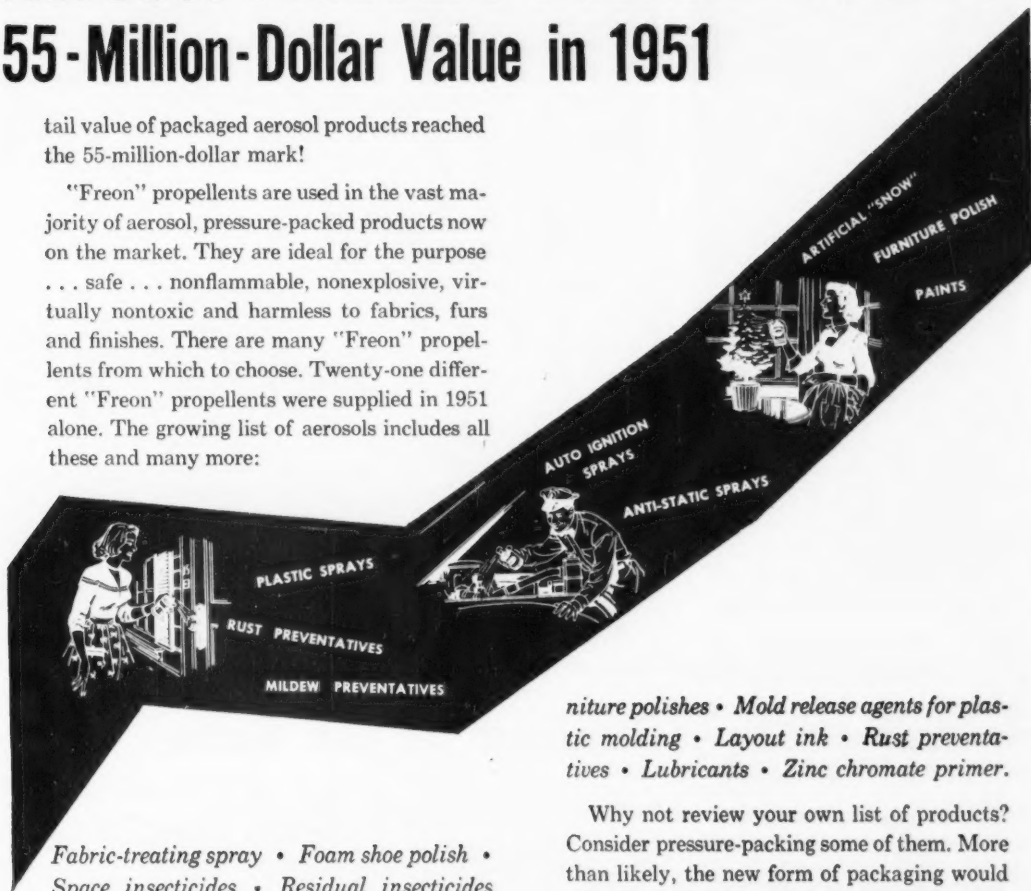
Chemical Week • December 6, 1952

Aerosol Pressure-Packed Products

55-Million-Dollar Value in 1951

tail value of packaged aerosol products reached the 55-million-dollar mark!

"Freon" propellents are used in the vast majority of aerosol, pressure-packed products now on the market. They are ideal for the purpose . . . safe . . . nonflammable, nonexplosive, virtually nontoxic and harmless to fabrics, furs and finishes. There are many "Freon" propellents from which to choose. Twenty-one different "Freon" propellents were supplied in 1951 alone. The growing list of aerosols includes all these and many more:



Fabric-treating spray • Foam shoe polish • Space insecticides • Residual insecticides (Roach and ant sprays) • Room deodorants • Mothproofers • Insect repellents • Water repellents • Athlete's foot spray • Shave creams • Artificial "snow" • Perfumes • Sun-tan oils • Hair lacquers • Dog sprays • Personal deodorants • Rug and upholstery cleaners and dyes • Burn treatments. Paints and lacquers • Clear plastic sprays • Anti-static sprays for seat covers, phonograph records • Auto ignition sprays • Fur-

niture polishes • Mold release agents for plastic molding • Layout ink • Rust preventatives • Lubricants • Zinc chromate primer.

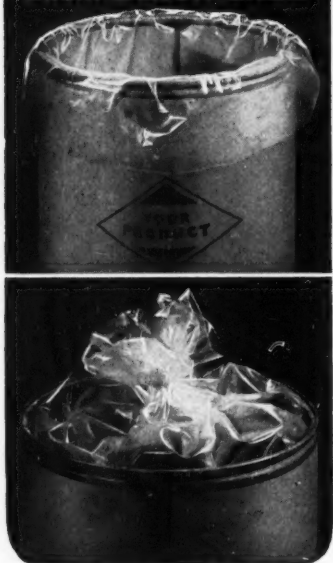
Why not review your own list of products? Consider pressure-packing some of them. More than likely, the new form of packaging would stimulate sales in your best markets everywhere. If you agree . . . the Du Pont Company will gladly send you informative literature on "Freon" propellents including a booklet: "Package for Profit." In addition, "Kinetic" technical service is also available to assist you with any propellent problem and help determine the right propellent to meet your specific needs. Address: E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.

PROPELLENTS

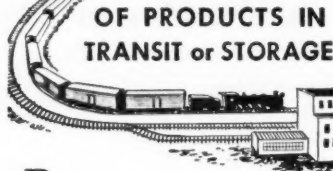


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SPECIALTIES....



WATERPROOFING, HOMESTYLE: Another aerosol for the pantry shelf?

Smiling at the Rain

Aerosol water repellents—silicone-, resin- or wax-based—are latest fast-moving home specialty.

Sales should touch \$1½ million this year, and makers rub hands at \$5 million yearly potential.

Countrywide rains that last week broke the nation's severest drought in years were a blessing for more than the farmer and forester. It also produced a torrent of orders for one of the newest aerosol specialties—push-button water repellents.

Already a fistful of such products have hit dealers' shelves, swelling sales from a trickle last year to a lusty \$1½ million this year. And the prospect of a \$5 million annual turnover glints brightly in the near future.

Built-in Umbrella: Howard G. Klehm, of Gard Industries (Wilmette, Ill.), limns the aim of the industry: "Water-repellent aerosols should be a pantry-shelf staple. Their uses haven't been realized by the householder—they're far from limited to clothing and shoes."

Klehm's Gard Industries was one of the first of the aerosol umbrellas to appear (CW, Apr. 28, '51). Promoted

adroitly, with the heaviest pitch in times of bad weather, sales of Gard touched a quarter of a million units last year. Since then, Gard has been joined by Pronto Waterproof, soon to be sold nationally after being test-marketed on the West Coast, Chicago, and New England by Aerosol Products Corp. (Chicago). Others are Shield, made by Surface Protection Co. (Cleveland); Dri, put out by Spickelmier Products Co. (Chicago); and Fab-Spray Clear Waterproof, by Henderize, Inc. (Sacramento, Cal.); to name but a few.

The popularity of the aerosols is readily shown by Gard's case: Sales up 100% in the last year, the company 50,000 units behind orders, and a new filling line on the way (Gard has been custom-filled up to now). Currently Gard is employing three shifts to catch up with demand.

Watershedders, All: There's variety

in the formulation of these aerosols. Pronto is a silicone (2-3%) type, in naphtha, with Freon 12. Shield is also a silicone-based type.

Dri, the Spickelmier product, is a wax mixture in carbon tetrachloride; Gard is described at 33.3% synthetic resins in a hydrocarbon solvent compatible with Freon. Sprayed on, the repellents take about 24 hours to dry, though faster-drying formulations are upcoming.

The aerosols are sold for a variety of applications,* generally retailing for \$1.75-\$1.95 in the pint size.

More accurately described as "water repellents" rather than "waterproofers," the compounds coat the cloth fibers, but don't alter the porosity or color of the garment. They're claimed to improve the hand of the cloth, cut soiling by water-soluble matter, and be resistant to washing and dry-cleaning.

Dry Cleaner Competition: These aerosol home-applied water shedders follow a number of products offered from time to time for household use. One that's been offered for a number of years is Dri Dux, a product of Dri Dux, Inc. (Westwood, N.J.).

Also giving the aerosols a run for their money is Goorin Bros.' (San Francisco) Rain Dry. It's a wax-and-plastic based material in carbon tetrachloride—is sprayed out of an 8-oz. (\$1.29) glass container with a miniature pump.

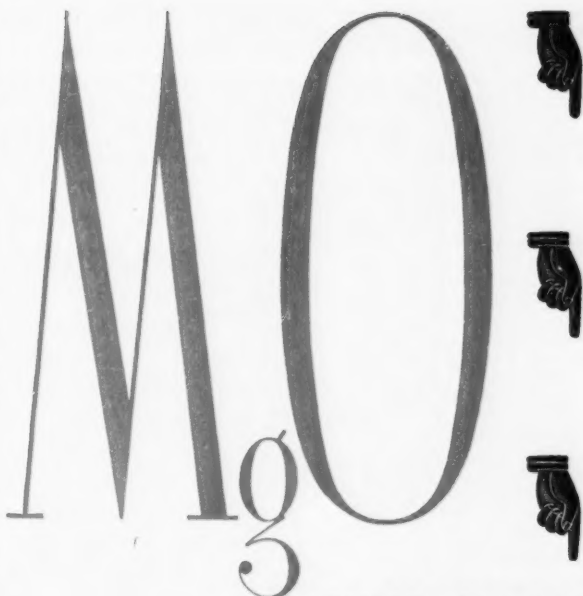
They're direct competitors, too, of dry cleaner-applied processes like Du Pont's Aridex (paraffin-wax type, in Stoddard solvent, with aluminum salts). But many of the dry cleaners buy the home-style aerosol products in case lots. Surface Protection has set up special distribution for its Shield; Spickelmier's Dri has for twenty years been offered to cleaners as Camelo; and Rain Dry, too, goes to dry cleaners.

They are also competitors of mill-applied water proofing treatments like American Cyanamid's Permel, S. C. Johnson's Drax, and Warwick Chemical Co.'s Norane.

The cost of having water-repelling treatments done professionally is much higher than to do them at home, however. One company's survey showed dry cleaner's prices ran from \$1.50 for a raincoat up to \$7.00 for a good overcoat. That compares with a \$1.75 aerosol that will treat more than two garments.

Walls and All: Treating clothing isn't the only place where the push-button units can reportedly save the

* Among them: tents, umbrellas, shower curtains, rugs, bathing suits, window shades, sporting equipment, lawn furniture.



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SPECIALTIES.

consumer money. One of the newer application is to use them to make washable, water-repellent wall paper. Instead of paying \$3-\$5 per roll for specially treated paper, a pint aerosol will do the water-repellent job for about \$2.00 and can be applied to any design wallpaper.

At least one firm, Empire Varnish

Co. (Cleveland), turns out a silicone product of this sort. Empire's specialty is known as Waterlox Water Repellent for Wallpaper. The 12-oz. can retails for \$1.69. But most of the other aerosol types can be used, too. It's all a matter of consumer education—and it's proving to be a profitable educational course for the aerosol makers.



REPELLENCY FIELD TRIAL: Low bite score for the best bug discouragers.

Bids for Comfort

Insect repellents applied to uniforms—that's the wily maneuver the Army's trying now. Key: a new repellent tagged M 1960.

Bids for 250,000 gallons of the new keep-away formulation will be opened next week by the Navy Purchasing Office in Washington—a big enough gallonage to indicate that the Army is planning to impregnate all summer uniforms with the formulation. It's a measure that could do much to boost GI's comfort and health.

Chemically, formula M 1960 consists of 30% each of benzyl benzoate, butyl propanediol, and butyl acetanilide, in an emulsifier such as Tween 80. Particularly effective against crawlers like ticks, chiggers, and fleas, it also works against mosquitoes.

Credit for developing the new formulation goes to the U. S. Department of Agriculture's Bureau of Entomology and Plant Quarantine at Orlando, Fla. That group, which already has worked out the well known 622 (dimethyl phthalate, 6 parts; inadone, 2 parts; and Rutgers 612-2-ethyl-1,3-hexanediol-2 parts),

has thoroughly tested M 1960 on troops, but until it has been tried on women and children, the Bureau doesn't recommend it for unrestricted civilian use.

Anti-Insect Arsenal: The Bureau admits it's far from the perfect repellent—one that turns away all bugs, lasts indefinitely, and is harmless and inoffensive to human beings. But M 1960 isn't the only new insect discourager in the Army's arsenal.

Designed to work hand in hand with the repellency of M 1960 are a couple of other repellents. These liquids, M 2020, and M 2043, are applied to the skin rather than to clothing, are particularly effective in driving off flying insects—gnats, mites, mosquitoes, flies. They offer up to six hours' protection.

The Army has just opened bids for 5 million 2-oz. bottles of these formulations, which will be put to use soon in Korea. Both M 2020 and M 2043 are blends of repellents. Like 622, dimethyl phthalate and ethyl hexanediol are basic ingredients. In M 2020, a third component is di-

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SPECIALTIES

methyl carbate,* in M 2043 it's propyl-N,N-diethyl succinamate, a compound found particularly effective against sub-arctic insect pests.

Cost vs. Comfort: Though exact figures aren't available, use of the repellents isn't cheap. One gallon of the M 1960 concentrate costs an estimated \$13-\$16 and will treat—it can be applied at the same time the clothes are being washed—about 14 cotton or 10 woolen uniforms. The bottled repellents, as purchased by the government, should run under a dime per flask.

Although the combined protection thus hits close to 90¢ per man, it's a small price to pay to discourage disease-carrying ticks and lice; moreover, it's impossible to put a price tag on the added comfort to the fighting man.

Right now, the Armed Services are exclusive users of these particular products, but there's a big potential in civilian applications, particularly for clothing impregnation in tropical regions. Already several military repellents have found wide public favor. Formulations like 612, developed by Rutgers Philip Granett, and 448 (a Navy development, 2-phenyl cyclohexyl cyclohexanol) are considered to be excellent, effective products. But the USDA thinks it has something better.

Specialty Specialists

The winter convention season is well under way. Scheduled for a three-day session (December 7, 8 and 9) at New York's Hotel New Yorker is the Chemical Specialties Manufacturers Assn.

Several of the CSMA's six divisions are taking advantage of the widespread interest in symposia and panel discussions. The fast-growing aerosol group has slated a couple such affairs—one on foam products, another on aerosols in the automotive field. The latter panel will likely draw in members of the newly formed Automotive Div.

Here are several other symposia:

- Fog Machines for Dispensing Insecticides (Insecticide Div.);
- How Various People Look at Labeling (Insecticide Div.);
- Role of Alkaline Builders and Detergent Formulations (Soaps, Detergents and Sanitary Chemical Products Div.).

At this 39th annual meeting of the CSMA, heavy scheduling of talks is going to keep many attendees hop-

ping. One report that ought to pull a crowd: George A. Burrough's talk on product liability. It's a subject of increasing importance these days.

Lilly-Schwegmann Delay: The tussle between Eli Lilly and Co. and Schwegmann Bros., New Orleans supermarket operator, has been put off. Hearing on the injunction, in which Lilly seeks to stop Schwegmann's selling of Lilly pharmaceuticals below fixed prices, was postponed until Dec. 15.

Schwegmann's lawyers claim the McGuire Act, under which the prices were fixed, violates the Constitution. The continuance was ordered to give the United States attorney general an opportunity to intervene, according to Schwegmann's counsel.

Aerosol for Kodak? Recent patent, issued to Eastman Kodak Co., Rochester, N.Y. has raised eyebrows among makers of insecticides. The patent (2,614,961) covers a propellant insecticide comprising of o-cyclohexenylcyclohexanone, pyrethrin extract, piperonyl butoxide, petroleum distillate and an inert propellant.

Richmond B'er: A. H. Robbins, pharmaceutical maker, is set to occupy its new \$1.5 million plant in Richmond, Va. The new plant, on a 10 acre tract, permits consolidation of offices and manufacturing plant.

West Acquisition: West Disinfecting Co. (Long Island City, N.Y.) has taken controlling interest in Lazarus Laboratories, Inc., Buffalo, N.Y. manufacturing chemists. The firm will become Lazarus Div. of West Co.; will continue development of a cattle mastitis treatment.

Alarm Clock Pill: Smith, Kline & French Laboratories (Philadelphia) has come up with a new twist on its spansule-type medication principle (CW, Oct. 18). A tablet has been formulated with a layer of pentobarbital, to produce sleep; a layer of butabarbital sodium, to maintain sleep; and a core of desoxyephedrine, a stimulant, to wake the sleeper in about eight hours. The pills are sold on prescription only.

Hay-Flavored Popcorn: This better be pretty close to the end of the line for chlorophyll—Dell Food Specialty Co. (Beloit, Wis.) is making a popcorn flavoring with chlorophyll. The flavoring, an edible oil with oil-soluble chlorophyll (which must be masked for palatability) is sprayed on the corn.

* Dimethyl cis-bicyclo (2,2,) - 5-heptene-2,3-dicarboxylate.

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SELLING, PACKAGING, SHIPPING: MCA panels point the way.*

From Plant to Customer

Members of the Manufacturing Chemists' Association are fully aware that their industry responsibilities don't end when their products are made. Just as important—both to the financial welfare of their companies and to the consuming public—are the distribution phases: selling, packaging, labeling, and transportation.

This viewpoint was reflected in the number of panel discussions devoted to such subjects at last week's MCA Winter Conference in New York City (see page 12).

Traffic Truisms: The chemical industry's traffic managers, in particular, had reason to be thankful for this broad attitude. MCA gave them a platform on which to say their piece—and they took full advantage of it. Moderated by Du Pont's R. W. Marshall, the Traffic and Transportation Panel gave a series of missionary talks on the benefits which a company's sales, purchasing, and production personnel may derive from close cooperation with their opposite numbers in the traffic group.

General Foods' vice president A. C. Schier set the stake for these discussions by outlining the scope of a traffic department's work. "We use

up to a million bills of lading a year," said Schier, commenting on just the sheer paper work load carried by his men. In addition, traffic managers must act as lobbyists before freight-rate-making governmental bodies, must fight for their companies in questions of freight-damage claims, and must actively keep abreast of all new developments in the field of materials handling and transportation.

As for sales, the helping-hand which traffic men can extend salesmen was explicitly described by Union Carbide & Carbon's general traffic manager, C. H. Beard. These were his major points:

- Customer relationships are benefited by prompt and swift delivery of goods.
- Minimizing transportation costs keeps the delivered price to the consumer within competitive limits.
- The customer gets the advantage of "pooled" car and truck shipments arranged by traffic men working closely with sales.
- Company - to - company relationships are enhanced by the frequent contact between the buyer's and seller's traffic departments.

The production side of a company, too, stands to benefit by an active, aggressive traffic group. "Transportation gives a place utility to goods," commented F. G. Moore, traffic man-

ager of the Columbia-Southern Chemical Corp. Production and inventories are best maintained when plant men learn to lean on their transportation partners in the close scheduling of incoming and outgoing goods. Moreover, traffic representatives have a great deal to offer in discussions on packaging and labeling.

Closely allied with all of these observations was the discussion on how traffic men aid in the work of their companies' purchasing agents. Since the significant cost of raw materials is the "delivered price," purchasing agents must often confer with the traffic department in deciding on raw material sources, according to D. G. Ward, Mathieson Chemical's director of transportation.

Package Panel: In one of concluding panel discussions of the day, representatives from federal organizations outlined the current outlook on procurement of packaging materials and the regulations leading to safe transportation (see cut).

NPA's Containers and Packaging Division director, John Clay, reported that the currently good supply situation in containers "would not change materially, assuming that the present international issue remains in *status quo*." He backed this up by reviewing the recession, modification, and liberalization of NPA orders affecting many groups of packaging materials.

Safe transportation on land and sea, according to both H. A. Campbell (chief inspector of the Bureau of Explosives) and Rear Admiral H. C. Shephard of the Coast Guard, is the result of close cooperation between government regulating bodies and industrial leaders. This is especially true, they commented, in the case of chemical goods.

Their remarks underline again that organizations like the MCA, realizing that their efforts must extend all the way to the ultimate consumer, are willing to devote a great deal of time and thought to the problems of distribution.

• **River Berth:** The Chemstrand Corp. is planning to dredge a berthing area in the Escambia River near Milton, Fla., for use in delivering crude oil and raw materials to its new nylon plant being built nearby. The shipments will come by way of the Intercoastal Waterway.

• **Eastern Sales:** Riding a sixfold sales-increase curve over the past four years, California's Beckman Instruments (South Pasadena) is construct-

* This group, which handled the discussion on packaging, includes (left to right) H. A. Campbell, Bureau of Explosives; J. C. Clay, NPA; T. P. Callahan, Monsanto Chemical; and Rear Admiral H. C. Shephard, U. S. Coast Guard.

DISTRIBUTION

ing a new Eastern sales and service building in Mountainside, N.J. The structure will also act as a manufacturing facility for the Helipot Corp., a Beckman subsidiary.

New Name: "Aniline Process" isn't the right name for the printing method used when flexible rubber plates and rapid-drying fluid inks are applied to paper, film, and foil packages—or so has decided a sub-committee of the Packaging Institute. From now on it should be called the "Flexographic Process." The aniline term has been described as "obsolete, inappropriate, and detrimental."

Out from Under: The Detroit regional sales office of Parke, Davis & Co. will soon have a home of its own—apart from the main headquarters located in the Motor City. Land has been bought several blocks away for the new facilities.

Philadelphia Salesmen: This is the time of year when sales associations

start electing their next year's officers. The presidential nod for the Chemical Club of Philadelphia went to Carl Obeck, with Jerry Nelson as 1st vice president.

Western Agent: Cambridge's Dewey and Almy Chemical Co. has chosen San Francisco's Martin, Hoyt & Milne as its exclusive West Coast sales rep-

resentative for D&A's organic chemicals division.

To the Market: In a closer-to-market commercial move, the Philblack sales division of the Phillips Chemical Co. is constructing a three-story office and laboratory building in downtown Akron, Ohio, heart of the carbon black-consuming rubber industry.

Another Explosive Round

In what appears to be a test case, U.S. truckers are watching the fate of Baggett Transportation Co.'s new hearings before the Interstate Commerce Commission. They concern the carrier's applications for permanent permission to carry explosives over three new routes in thirteen Eastern and Middlewestern states. Possibly hanging in the balance are similar requests from twenty other truckers. Before World War II, the railroads handled nearly 97% of the explosives traffic. During the war, when many

transportation regulations were temporarily suspended, the truckers gained wide experience along these lines. Baggett itself claims to have hauled more than 300,000 tons of "dangerous explosives, ammunition, and blasting supplies." The truck firm, like its fellows, would like to expand in the business, and the question seems to have settled down to a struggle between the truckers and the railroads, which would like to have the bulk of the traffic for themselves again.

Case Reopened: Baggett reached its



Boosting the Basics at Breakfast

BASIC PRODUCERS of plastic molding powders and resins are fully aware that they are at least one step removed from the actual plastic-selling firing line. They can't sell a pound unless their molding, casting, extruding customers successfully market the newer plastic items. Therefore most producers are more than willing to lend a hand in promoting their customers' products. They're boosting the basics, too.

This principle was amply demonstrated at a breakfast staged by Mon-

DISTRIBUTION . . .

present position as a test-case proponent by winning an ICC examiner's approval on its applications nearly a year ago. But this ruling was held in abeyance as a result of protests filed by rail and other motor carriers. The railroads are now happy, since the ICC's decision made late last month to hold new hearings is equivalent to setting aside the earlier approval.

Both sides have marshalled powerful support for their views. The railroads, which claim that hauling explosives by truck constitutes "a serious danger and traffic hazard," are being backed by the governments of twelve states and seven cities, the American Automobile Association, and even the National Congress of Parents and Teachers.

As for the truck lines, they have received the implied blessing of the Defense Department, a major factor in the inquiry. The motor carriers' arguments center on the thesis that, granting dangers exist, they are no greater than those involved in loading a railroad car with the same material.



santo Chemical in New York. The guests, representing consumer groups and publications, were given an education on "How to be Handy with Plastics." Monsanto's melamine, vinyl, and styrene products were everywhere in evidence, but they carried the trade marks of Monsanto's customers.

Latching onto the current trend toward do-it-yourself home repairs and improvements, the show ranged all the way from the established use of melamine for table tops to a home sewing course using vinyl fabrics.

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PRODUCTION . . .

Technology Shares Spotlight

If you like to tackle the difficult, you might try transferring a complete set of Shakespeare to the head of a pin. Or, you could try covering technical developments in the three broad fields of titanium, coal hydrogenation and petrochemicals in an hour and a quarter—as did three experts at the ninth panel discussion of the MCA's semi-annual meeting and winter conference last week.

But if the coverage was something less than complete, the three distinguished guests did a masterful job of highlighting and placing in proper perspective the most significant of recent developments in their fields.

On the Way: Leading off and standing in for his boss E. A. Gee (who was originally scheduled to speak) was Du Pont's Radtke. He gave a detailed account of the properties of titanium that have made it so desirable as a material of construction. Presently, said he, over ninety percent of all the titanium produced has gone into aircraft. But a recent Du Pont survey indicates it will find its way into many other fields including equipment for the chemical process industry. It's particularly suitable for application in chloride media where excessive corrosion normally brings on high maintenance costs.

Radtke puts the potential market for titanium at between 100,000 and 500,000 tons a year provided the price can be cut to about \$1 a lb.—where it will become almost competitive with stainless steel. Even at the going price (\$5 a lb. for sponge, up to \$20 a lb. for fabricated forms) the output for the whole industry has climbed from 10 tons in 1948 to an estimated 1,000 tons for this year. It should hit 7,200 tons in 1953. Radtke looks forward with confidence to the discovery of "new processes for titanium in the foreseeable future." He adds that Du Pont alone is sinking \$1 million a year in research for just that goal.

Sold on Coal: Carbide and Carbon's Vice President Harry McClure took the rostrum to make the case for coal hydrogenation. He outlined the status of the project at Institute (W. Va.), the process that's being used and the improvements that Carbide engineers have worked out (*CW*, May 10). Among the more important contributions of Carbide to coal hydrogenation techniques for chemicals, said McClure, were cutting the reaction time (from 45 to less than 4.5 min-

utes), operating pressure (from 7,500-10,000 to 3,500-6,000 psi.) and the amount of hydrogen required ("at Institute, we just kiss the coal with hydrogen").

On the Other Side: Instead of emphasizing the rapid rise of petrochemicals—the usual approach to such a discussion—Martin Buck, manager of the Manufacturing Development Department for Shell Chemical, took a different tack. He accented the fact that petrochemicals reached their present status because the market was there and the price was right.

In general, Buck's outlook for petrochemicals closely paralleled McClure's for coal hydrogenation chemicals. The two were so close that Buck's only deviation from his carefully read speech was to assure the audience that "there had been no collusion."

But there was practically a head-on collision regarding some of their conclusions. For while both cited figures showing the increased demand for aromatics in various fields, Buck was proving that petrochemicals had a solid future, McClure was showing the need for coal hydrogenation products.

. . . With Safety

But production executives who attended the MCA conference last week had to make a choice between panels. For there were two safety panels in the afternoon session and the second one ran concurrently with the panel on technical developments (see above).

At the first panel session on safety, Samuel M. MacCutcheon, director of the safety department of Dow Chemical, pointed out the big strides that the chemical industry has made in reducing its severity and frequency rates.

He noted that the figures for the chemical industry were well below the national average for all industry. "But," said he, "we must remember the classical definition of 'average,'—the worst of the good and the best of the lousy."

At the later session, George L. Corbell, safety director for Monsanto said the biggest need for safety programs was in the smaller plants. He quoted statistics to prove his point: the smaller the plant the higher the accident rate. For the chemical industry, the accident frequency and severity rates for plants with less than 100 employees are about four times as high as those of plants employing 500 or more.



SIX MINUTES after the fuel oil fire gets underway (left) re-

Flame Fighting

Normally, the three men who climbed thirty feet to the top of the tank and set fire to the contents—2 million gallon of fuel oil—would have been prime candidates for prosecution as arsonists. And with approximately 500



WITH KEROSENE FIRES (left) the method doesn't put the



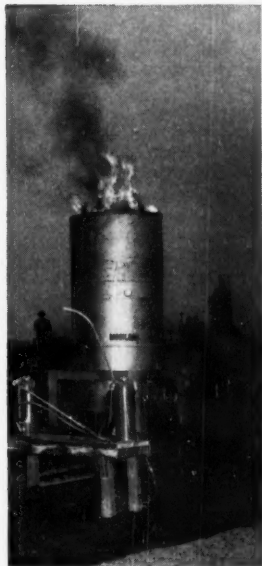
finery manager E. L. Sinclair turns the valve (right) that starts air gushing into the bottom of the tank. Just 37 seconds later, the fire is out.

Twist: Air In, Fire Out

witnesses to the deed, they would have been easy marks for a speedy conviction. It was, however, all part of a day's work: They were merely setting the stage for a demonstration of Socony-Vacuum's latest fire fighting

technique at the firm's Paulsboro (N.J.) refinery.

Refinery Manager E. L. Sinclair gave the fire about six minutes to gather up a full head, then stepped up and turned a valve. Just 37 sec-

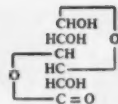


fire out completely. But it does bring it under control so that it can be extinguished by other methods. Fireman (right) finishes it off with a spray of foam.

December 6, 1952 • Chemical Week

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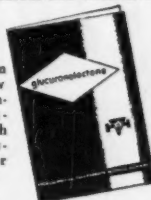
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PRODUCTION

onds later, the fire was out.

New Twist, Old Idea: All methods for fighting fires of flammable liquids are based on the fact that the fire can survive only when there's a certain proportion of air and vapor above the liquid. Thus, blanketing the liquid with an inert gas cuts down on the proportion of air in the mixture. Spraying with foam reduces the amount of vapor released, at the same time excludes the air.

Socony-Vacuum's technique robs the mixture of its vapor content by agitation of the liquid. Air, introduced at the bottom of the tank, forces cool liquid to the surface. Since the vapor pressure of the cool liquid is lower than that of the liquid it replaces, the air-vapor ratio changes; the fire either dies out or comes to a point where it is easily extinguished by other methods.

At Paulsboro, the firm showed how the technique worked on kerosene and crudes as well as fuel oil. But applications aren't limited to those. It can be used to extinguish a fire of any liquid that has a flash point higher than its storage temperature and a relatively low vapor pressure. That would include vegetable oils and linseed oil.

Moreover, it can be used on fires caused by liquids with high vapor pressures and low flash points like gasoline and other solvents. In that case, it won't put the fire out completely, but will bring it quickly under control.

Socony-Vacuum is quick to point out that the new method involves no heavy investment in equipment. All that's needed is an air compressor that can be hooked up to existing lines entering the bottom of the storage tanks.

Although the idea of fire fighting by agitation dates back to the late '20s, Socony-Vacuum reports it has spent \$100,000 in perfecting the system. It currently is awaiting action on patents for the process. If they are granted, the firm will be ready to license all comers on a royalty-free basis.

EQUIPMENT

Made of Magnesium: Magline, Inc. (Pinconning, Mich.) has just brought out an all-magnesium barrel skid for materials handling. Magline claims the new skids combine light weight and strength, thus speed handling, reduce risk of lifting injuries.

Across the River: American Wheel-brator & Equipment Corp. (Mishawaka, Ind.) has moved its New York City district office across the river to Hoboken, N. J. The firm says the move

brings it closer to customers in the portions of Pennsylvania, New York, Connecticut and New Jersey that are served by the office.

Quicker Coupling: Snap-Tite, Inc. (Union City, Pa.) reports it has incorporated a new design in its Snap-Tite couplings aimed at simplifying coupling problems. Having standard flanged connections, the coupling also has a valve in the coupling body. The valve shuts off fluid flow whenever the male half is removed. It's made of forged steel, bronze or other material, is said to be suitable for containing liquids or gases or for use in vacuum circuits.

Switch to Dynel: Foote Mineral Co. (Philadelphia) now reports it has reduced shutdowns and cost of replacement by switching to Carbide and Carbon's dynel for filter cloths in its rotary vacuum presses. The filter cloths were subject to exposure to solutions of caustic soda (50%) and ammonium hydroxide (28%). Although the dynel immersed in the caustic lost 6% of its strength, no physical damage occurred and no shrinkage was observed in either case.

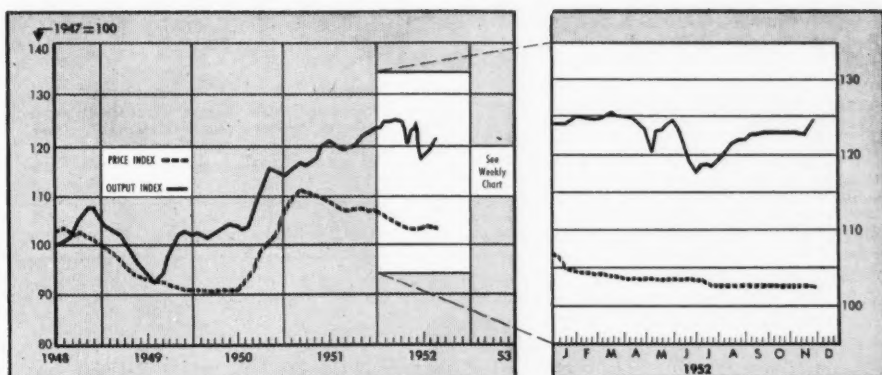
Plastic Floors: Ceilcote Co. (Cleveland) claims that its new synthetic surfacing material is a more-than-adequate replacement for acid-proof brick. Made of a resin, inert filler and pigments, the material is applied to floors or walls with a trowel. It is said to withstand solvents, acid and alkali, to stand up under trucking, foot traffic and abrasion. Tagged Ceilcrete, it's being sold either black or colored.

Bigger Sizes: Superior Tube Co. (Norristown, Pa.) is now producing seamless light-wall tubing in outer diameters of 2 1/4 in. Previously, its biggest size was 1 3/4 in. The firm says the larger size seamless tubes are suitable for bellows in industrial instruments, for flexible metal hose and low pressure heat-exchanger tubes. They're made of types 304, 321 and 347 stainless and Monel metal.

More Space: Morse Manufacturing Co. (Syracuse, N.Y.) is building a new plant in Syracuse to increase its production. Morse says the move was made necessary by increased demand for drum handling equipment, trucks, dollies and drum faucets.

Water Systems: The F. E. Myers and Brother Co. (Ashland, Ohio) is bringing out a two-stage water system for deeper wells and installations requiring higher discharge pressures.

MARKETS



CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries
CW Price Index—Basis: Weekly Prices of Sixteen Selected Chemicals

MARKET LETTER

Bromine is much in the air these days. Latest figures, just released by the Bureau of Mines, show 1951 total bromine compound sales figures to be 39% higher than the year before; and topping war year 1944, previous all-time high.

And more is yet to come. In line with upping its goal for the key bromine compound—ethylene dibromide—DPA granted Dow Chemical an accelerated tax allowance of 80% on an \$8½ million plant at Freeport. Translated into capacity terms—this should figure to 70 million more pounds annually for the tetraethyl lead program.

Plastics, all kinds, are headed for a big year, may equal record year 1951. After a poor first half-year, each month's total sales since July has topped the month before.

But there's some temporary selectivity. One or two types, e.g., alkyds, are tapering off a bit, but are expected to ride out the seasonal lag, pick up in a few weeks. No one seems the least concerned over the slight lull.

Phenolics may also dip, but only momentarily. Demand from TV cabinet molders continues to draw heavily; paint makers, too, are once again making a steadily rising bid.

In polyvinyls, however, producers say they can no longer keep up with orders—deliveries are now falling several weeks behind. One reason for the sudden pinch: More copper now being allocated for wire and cable assures more polyvinyl-coating demand.

Urea-formaldehydes hover in an in-between status—no lag, no tightness. Seasonal let-downs have not materialized.

Government orders for bleaching powder are squeezing the civilian market tight. One re-seller sees no early relief from domestic sources, is trying to beat the shortage by lining up British sources.

Blame the weather if muriatic acid goes into tighter supply. Partly a consequence of the summer dry spell, less DDT (and therefore

MARKET LETTER

WEEKLY BUSINESS INDICATORS

	Latest Week	Preceding Week	Year Ago
CHEMICAL WEEK Output Index (1947=100)	124.2	123.7	124.5
CHEMICAL WEEK Wholesale Price Index (1947=100)	102.2	102.3	106.7
Bituminous Coal Production (daily average, 1,000 tons)	1,738.	1,803.	2,032.
Steel Ingot Production (1,000 tons)	2,191,000	2,203,000	2,079,000
Stock Price Index of 14 Chemical Companies (Standard & Poor's Corp.)	257.8	250.6	224.7

MONTHLY INDICATORS—FOREIGN TRADE (Million Dollars)

	Latest Month	EXPORTS Preceding Month	Year Ago	Latest Month	IMPORTS Preceding Month	Year Ago
Chemicals, total	\$60.7	\$62.5	\$85.3	\$21.3	\$17.4	\$21.3
Coal tar products	3.2	3.4	6.8	3.9	4.11	6.8
Medicinals and pharmaceuticals	16.4	16.7	23.5	.4	.7	.8
Industrial chemicals	9.6	9.1	15.8	4.5	3.4	6.5
Fertilizer and fertilizer materials	4.4	3.9	5.2	10.6	8.3	5.9
Vegetable Oils and fats, inedible	2.8	4.2	10.2	6.1	8.1	4.9

less by-product muriatic) has been made lately. Suppliers say that, if anything, it'll become tighter for awhile.

As for DDT, it looks as if it's still piling up. One straw in the wind: Commerce Department's Office of International Trade has now ruled that the insecticide may be exported anywhere (except through the Iron Curtain) under general export license. Previously, agricultural insecticides containing 25% or more DDT required special individual licenses.

Benzene hexachloride, too, has been tilting with poor demand. In one part of the country, at least, the situation is so dismal that Du Pont has begun to move production men away from its closed-down operation at La Porte, near Houston. Texas cotton growers just haven't been interested—with bad weather again being blamed.

Sulfuric acid stocks are in a mixed position. Producers are now beginning to disagree on immediate future supplies. Most contend there is still plenty left over from a slow summer. But at least one maker reports a sudden tightening with no relief expected.

There's manganese in those Down East hills, but getting it out will be another matter. The Bureau of Mines Report of Investigation No. 4921, just released, on the Maple Mountain-Hovey Mountain area in Maine shows that the region has respectable quantities of the strategic metal, but it contains only one-fourth the manganese content of customary commercial-grade ore. Upgrading possibilities are now being checked.

More cobalt, necessary ingredient in this jet-engine age, can be expected by the end of next year. Two new chemical plants, plus a new refining method, will add 2,700 tons of pure cobalt yearly—a big assist to the U. S.'s present 5,000-ton annual consumption. Heart of the improved process: leaching in autoclave under pressure.

Now that methylene chloride is off control, watch for the big non-flammable paint stripper push (CW Market Letter, Nov. 22). Next-to-last chemical on M-45 order, methylene chloride was in free supply, its producers claimed, as a result of expanded production. Last week NPA at long last agreed.

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending December 1, 1952

UP	Change	New Price	Change	New Price
Pyridin, denaturing, gallon, c.i.	\$.15	\$2.82	Soybean Oil, crude, lb., T/C	\$.0025 \$.1225
DOWN				
Litharge, lb., c.i.	\$.0025	\$.1575	Lead, metal, lb., c.i.	\$.0025 \$.1400

All prices per pound unless quantity is stated.

THE PERKIN-ELMER INSTRUMENT DIGEST

A condensation of some articles in the Fall issue of *THE PERKIN-ELMER INSTRUMENT NEWS*, a publication of The Perkin-Elmer Corporation, manufacturers of scientific instruments—Infrared Spectrometers, Tiselius Electrophoresis Apparatus, Monochromators, Flame Photometers, Continuous Infra-

red Analyzers, Amplifiers, Astronomical Equipment, Thermocouples, Lenses, Crystal Optics, Special Designs for the Government.

For further information, write The Perkin-Elmer Corp., Norwalk, Conn. Southern Regional Office: Lee Circle Building, New Orleans, La.

Norwalk, Conn.

December, 1952

Vol. 4, No. 1



Model 12C Spectrometer at Merck & Co.

Infrared Determination Of Deuterium in Water

The importance of deuterium in chemical, biochemical and process development tracing studies as well as in isotope dilution assay methods may now be regarded as well established. Any improvement in reliability and precision of method, whereby deuterium can be determined in water, naturally is of primary interest to investigators in these fields.

A method is described in detail in the Fall 1952 issue of *INSTRUMENT NEWS* that can be carried out directly on liquid water samples as small as 10 mg. It covers a concentration range of 0-5 percent.

• **Deuterium Shift**—The spectrophotometry is made possible by the magnitude of the shift in wavelength (of the stretching frequency) which accompanies the substitutes of a deuterium atom for one of the hydrogen atoms of water. This shift from 2.8 microns to 4.0 microns (for the fundamental) corresponds to a factor approximately equal to $\sqrt{2}$ and is in accord with fundamental theory for a doubling of the mass of the atom involved. The intensity of the O-D band can be measured spectrophotometrically and thus provides a determination of the deuterium content of the water sample.

About two years ago, an infrared spectrophotometric technique for the determination of deuterium in water based on the principle outlined above was described. Extensive experience with the method revealed that it suffered from a lack of adequate reproducibility (precision). This was found to be due to an unexpectedly large temperature coefficient of the absorbance of the O-D band at 3.98 microns. This was eliminated by the construction of a thermostatted absorption cell. It is now possible to obtain deuterium assay values in the region of 2 percent with a precision of ± 0.01 units, i.e., ± 1 percent.

From an article by N. R. Trenner and R. W. Walker in the current *INSTRUMENT NEWS*.

CONTINUOUS ANALYSER PROGRAM APPROACHING FINAL STAGES

The continuous analyser program, which has been under way for some time at Perkin-Elmer, is nearing final stages with the completion of two different types of instruments.

The **TRI-NON®** Analyser (basically a Triple Beam, Non-Dispersion, Selective Detector, Infrared Analyser) is a highly stable and sensitive instrument. It is well suited for the common class of problems where there is considerable interference between the component of interest and the other components in the stream.

The **BICHROMATOR®** Analyser (i.e., two color or wavelength analyser) records the ratio of any two wavelengths of radiation. With the proper choice of prism materials and detectors it may be used in virtually any region of the spectrum for continuous analysis of either liquids or gases. It may

be used wherever single point analysis is possible on a laboratory spectrometer.

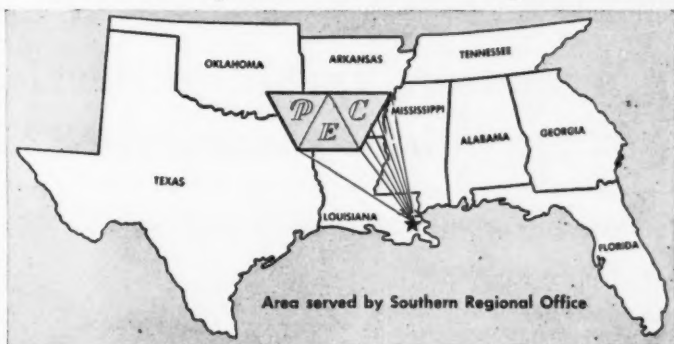
It is interesting to note that the electronic components in the two instruments from the preamplifier are identical, thus, simplifying field servicing in multi-unit installations.

The next issue of *INSTRUMENT NEWS* will carry further details on the analysers.

Our approach to process control instrumentation will be to provide a complete solution to the problem using whatever instrumentation is necessary rather than sell two different analysers and let the user decide between them.

We are now ready to start considering your control problems. Questionnaire data sheets are available from us to describe your applications completely. Your problems will be given our careful attention.

Perkin-Elmer Opens New Southern Regional Office



A Perkin-Elmer sales and service office was opened in New Orleans' Lee Circle Building. Headed by Seymour G. Linsley, the new office will provide sales and service assistance to present and potential users of Perkin-Elmer equipment in the south and southwest.

An important feature of the office is the laboratory-showroom where operating models of all Perkin-Elmer instruments are installed and sample infrared spectra will be run. Repair and service facilities will also be available from the New Orleans office.

Visitors to New Orleans are invited to inspect our new office. Trained personnel will be happy to assist with your

infrared and analytical problems. Working models of Perkin-Elmer instruments are on display.

Receive 8-page Instrument News

Write: The Perkin-Elmer Corporation, 820 Main Avenue, Norwalk, Connecticut

Featured in the Fall Issue are:

INFRARED DETERMINATION OF DEUTERIUM IN LIQUID WATER

Article by N. R. Trenner and R. W. Walker

"BIG GLASS"

Fabricating large optical pieces

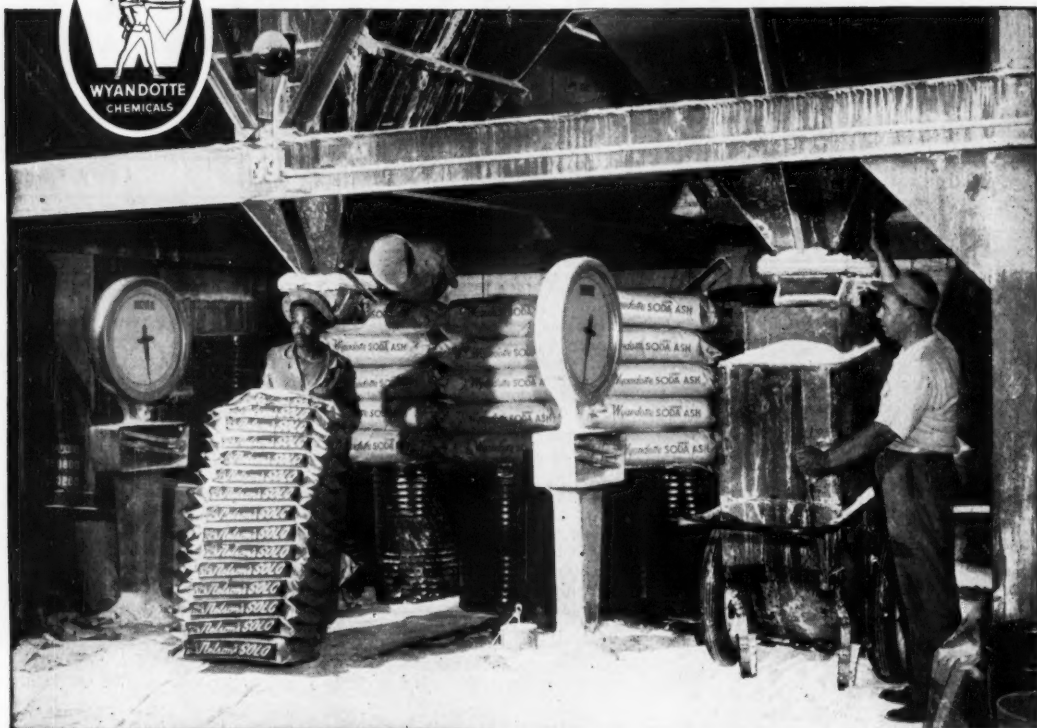
INFRARED DETERMINATION OF FIVE

C₁₀ AROMATICS

Monsanto Case History



Dependable Source for Chemical Raw Materials



Nelson Chemicals' plant superintendent, Jack Schey (right), loads bin cart from huge soda ash hopper. Bags in background are for Nelson's customer needs.

Wyandotte Technical Service saves Nelson Chemicals \$25,000 a year!

Handling cost of Wyandotte Soda Ash is reduced 90%!

Nelson Chemicals Company, Detroit, was buying Wyandotte Soda Ash in 100-lb. bags.

"Then," relates Mr. Harold R. Nelson, Nelson Chemicals Company, "Wyandotte Technical Service engineered equipment which enabled us to unload soda ash from a car into two 100-ton capacity hoppers in our plant. This installation saves us the difference between bag and bulk purchases and cuts handling costs 90%. It paid for itself within two years, and we enjoy a

yearly savings of approximately \$25,000! We've been a Wyandotte customer for 21 years for soda ash, caustic soda and liquid chlorine. Wyandotte has always been a helpful and reliable source of supply."

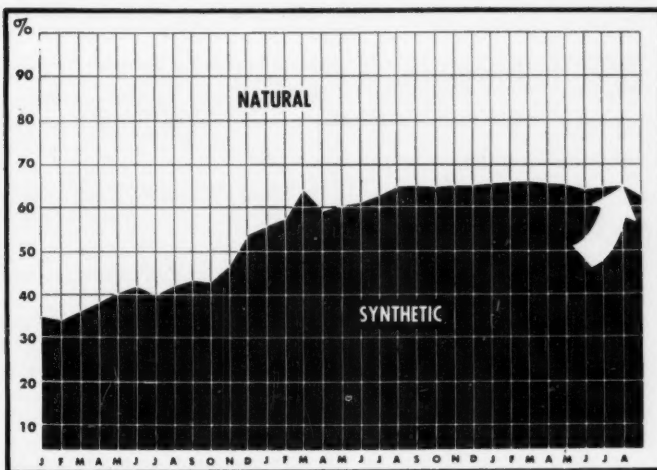
In periods of long or short supply, Wyandotte Chemicals — with its own salt wells, coal mines and limestone quarries and complete manufacturing facilities located on one of the world's great waterways and on major railroads and truck lines — is a

dependable source of supply for you, too. Recent expansion of soda ash production facilities means an even greater supply to meet your future needs.

For soda ash and helpful technical service, call on — *Wyandotte Chemicals Corporation, Wyandotte, Michigan. Offices in Principal Cities.*



Wyandotte
CHEMICALS



Natural Rubber Rebound

A SIGNIFICANT REVERSAL of the longtime downtrend (see arrow) in percentage use of natural vs. synthetic rubber is cause for elation among the producers and dealers in the natural product. Latest ratio shows a 2% swing in favor of the natural over the previous month. This modest rise, say the natural rubber interests, is the first hope they've had in months that their product would see better days. Big factor in the reversal is the sharp increase in sales of the lower grade of crude rubber. Since only 8 of the 30 grades of natural rubber are now priced higher than GR-S synthetic, the producers are now confident they can hold their own in the battle

against synthetic. Additional hopes of the natural rubber interests spring from two other early possibilities: (1) that synthetic rubber plants may be sold to private industry, reflecting their belief that synthetic is priced unrealistically low; and (2) that rubber-base paving, on test for the past three years, will play a part in the U.S. highway construction program.

Natural rubber's fortunes have closely followed its price movements. In December, 1950, when the GSA took over all import purchases, the price was close to 80¢ per pound. By the time GSA relinquished its controls this past summer, the price was in the 20's. The rebound followed.

Veteran on the March

Unheralded but of prime importance, the number-one weed killer, sodium chlorate, is now on the march. Government and private expansion together will double 1951 capacity in the next two years.

Although new and valuable herbicides have been and still are being developed, none yet appears to be ready to take over the mass killing work of veteran sodium chlorate. In a field where economics is the prime consideration, chlorate is not only holding its own, but is also moving ahead.

Sodium chlorate has, of course, other uses in addition to its function as a weed killer. But other outlets, e.g., paper bleaching, would certainly not warrant the program planned for the material.

In round figures, the forward advance works up like this:

Year	Production (million lbs.)
1947	36
1951	80
1955 (planned)	145

Specifically, DPA expansion plans, disclosed earlier, call for a 77-million pound increased annual capacity. In terms of previous capacity at 68 million pounds, the step-up on the war of the weeds works out to a 113% increase in poison dosage.

The fight is being carried out on two fronts. About 26 million pounds of the increase is under way at government expense; the remainder is in private hands with tax cut assistance.

Southern Salt: Biggest of the pri-



A New Market—Invisible Protection

DISPLYING a polyethylene envelope designed to protect the contents without loss of attention value, Thomas B. Haire (left), publisher of *Cosmetics & Toiletries*, shows Steve Mayham of the Toilet Goods Assn., the first issue of any magazine sent through the mails in this manner. Cooperating with Haire, the Plax Corp. (Hartford, Conn.) and Crystal-X Corp. (Lenni Mills, Pa.) developed the answer to a publisher's prayer: a mailing container that would display the cover design without danger of soiling or tearing. Cost, says Haire, still a bit above customary wrappings, is expected to drop into line as more efficient handling methods are developed.

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Autoclaves, Steel, Hor. 66"x147", First Machinery
Corp., 157 Hudson St., N.Y. 13, N.Y.

Calender, New 6x12", Johnson Joints, Complete
Eagle Industries, 108 Washington St., NYC.

Centrifugal 36"x40", Bird, Continuous, Consoli-
dated Products, 18 Park Row, N.Y. 38, N.Y.

Centrifugals, Bird 48", Rub. Covered, First Mach-
inery, 157 Hudson St., N.Y. 13, N.Y.

Crusher — Allis Chalmers, Two Roll 18 x 36, Loeb
Equip. Supply Co., 1927 A W. North Ave., Chic. 22

Dryer — American Double Drum 42" x 120", Loeb
Equip. Supply Co., Chicago 22.

Dryer — Rotary 41/2" x 28 Direct Heat, Loeb Equip.
Supply Co., 1927-A W. North Ave., Chicago 22.

Dryer, Vacuum Shelf, 20 shelves, 59 x 78, pump,
cond. (6). Consolidated Prod., 18 Park Row, N.Y. 38

Dryers, 2 Stainless Drums; 5'x10', First Machinery
Corp., 157 Hudson St., N.Y. 13, N.Y.

Filter — Oliver 3' x 4' Everdure Contact Parts.
Loeb Equip. Supply Co., Chicago 22.

Filter Press, 18" x 18", Sperry, Iron, P & F, 11
chambers (20) Consolidated Products, 18 Park
Row, N.Y. 38.

Filter Press, 30" x 30", Iron, Sperry, steam heated,
30 chambers. Consolidated Products, 18 Park
Row, N.Y. 38, N.Y. Barclay 7-0600.

Filter Press, 42" x 42", Iron, Shriver, 18, 27, 36,
54 Chambers (12). Consolidated Products, 18
Park Row, N.Y. 38.

Filter Press, 30" x 30", Aluminum, 45 Chambers
Consolidated Products, 18 Park Row, N.Y. 38

Filters, all sizes and types. Perry Equipment
1415 N. 6th St., Phila. 22, Pa.

Labelers, All types, Rebuilt & Guaranteed. Process
Industries, 305 Powell St., Brooklyn.

Mills, Raymond #5057, High Side Roller, (2)
Consolidated Prods., 18 Park Row, N.Y. 38.

Mills, Traylor tube, 5'x22", 5'x20", 4'6"x18'6",
4'x13", stone lined, pebble charge (4). Consoli-
dated Products, 18 Park Row, N.Y. 38, N.Y.

Mixers, 700 gal. Turbo, Simplex, Jktd. (2). Con-
solidated Products, 18 Park Row, N.Y. 38.

Mixer, horiz. ribbon, 14'x7'6"x6', Jktd. 450 cu. ft.
Consolidated Prod., 18 Park Row, N.Y. 38.

Mills, Day 14" x 30" 3 row high speed roller (8)
Consolidated Prod. Inc., 18 Park Row, N.Y. 38.

Pebble Mills; 8'x8', Porcelain lined. First Machi-
nery Corp., 157 Hudson St., N.Y. 13, N.Y.

Pebble Mills 10 gal. to 800 gal., porcelain lined,
20, Consolidated Products, 18 Park Row, NY 38

Pulverizer — Mikro #4 with 40 HP AC motor.
Equip. Clearing House, 285-10 St., Bklyn 15.

Pumps, 5/5 Centr. Labour, self-prim. 5 and 10
HP. (6). Consolidated Products, 18 Park Row.
N.Y. 38.

Reactors, Pfaudler Jktd. 400 Ga. First Machinery
Corp., N.Y. 13, N.Y.

Screens — Tyler Hammer 4' x 10' double deck.
Loeb Equip. Supply Co., Chicago 22.

chemical process industries

For Sale

Tablet Press, No. 51/2, Colton 3" maximum. Consolidated Products, 18 Park Row, N.Y. 38.

Tanks—2—2725 gal. tanks; same as above specifications except length—these are 20' long. Tanks were used in milk tank truck services. Can be loaded on trucks at present location or on cars at nearby Railroad siding. Leonard H. Himes, Exton, Pa. Phone—Exton 760.

Tanks, Steel, Processing, 15,000 gal. vertical, 80 lbs. int. pr.; Turbo agitator 40 HP motor, pipe coils. Perry Equipment, 1415 N. 6th St., Phila. 22, Pa.

Tanks, Alum, closed—330, 480 and 1450 gal. Perry Equipment, 1415 N. 6th St., Phila. 22, Pa.

Tanks, Rubber Lined, 10,000 gal. vertical, closed, with Turbo Agitator 25 HP motor and pipe coils. Perry Equipment, 1415 N. 6th St., Phila. 22, Pa.

Tanks, 5/5, from 30 gal. to 5700 Gal. Perry Equipment Corp., 1415 N. 6th St., Phila. 22, Pa.

Tank, 5/5, 13,500 gal. Vert. closed agit., 5/5 coils, 7 1/2 HP Motor. Consolidated Products, 18 Park Row, N.Y. 38.

Tanks, Plaudler, 500 Gal, 55, Mixing. Process Industries, 305 Powell St., Brooklyn.

Tanks—6—2250 gal.-type 18-8 stainless steel 60" Diameter—16" long—20" manhole on top with 3" inlet connection in manhole cover, 3" outlet in rear head at bottom good for 30 lbs. air pressure; 1 1/2" cork insulation, mild steel outer jacket, most of them recently new insulation. Tanks were used in milk tank truck services. Can be loaded on trucks at present location or on cars nearby Railroad siding. Leonard H. Himes, Exton, Pa. Phone—Exton 760.

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CHEMICAL WEEK

330 W. 42nd St., N.Y. 36, N.Y.

MARKETS

vate deals is the Oldbury Electro-Chemical Company's plant—scheduled to rise shortly on the banks of the Tombigbee River, just south of Columbus, Miss. (CW, Sept. 27). Although Oldbury would not reveal the expected capacity of the new operation, an outside expert estimated the possible annual production to be in the neighborhood of 25 million pounds.

One company spokesman, discussing sodium chlorate operations, indicated these factors as being the most important in the decision to locate near Columbus (not necessarily in order of importance): (1) proximity to salt and (2) cheap electricity.

• Salt will come from Louisiana deposits. Although conveniently accessible, the haul to the production site may double the present cost of the material.

• However, this increase is more than counterbalanced by the electricity rate differential between Niagara Falls, location of the company's present plant, and Columbus. For not only are Niagara power costs high, but the state public service commission may allow a further increase.

Not Ideal, But . . . While agricultural authorities may not nominate sodium chlorate as the perfect weed killer, demand from the farmers is urgent and persistent.

Experiments repeatedly show harvest yields in the uncontrolled fields of only one-third to one-half that of the controlled areas. So, until another weed killer appears that is cheap and safe, yet effective, the farmers will continue to insist on sodium chlorate for weed control.

Tariff Tiff

Last week two Canadian firms, Dow Chemical of Canada, Ltd. and Dominion Tar and Chemical, appeared before the Tariff Board in Ottawa.

Their complaint: Surplus ethylene glycol production from the "soft" United States market was being "dumped" across the border, would force Dow to close shop, Dominion Tar to abandon production plans. Their proposed remedy: impose a 20% duty on imports.

In evaluating the request, the Hon. Douglas Abbott, Minister of Finance, will also attempt to learn why such a large spread now exists between the cost of the basic ingredient and the retail permanent anti-freeze price.

One disturbing result, should the Tariff Board grant the request: taking glycol off the "free" list means international renegotiations on the item.

BOOKLETS

Chemicals

Synthetic Organic Chemicals

20-p. booklet entitled "Physical Properties of Synthetic Organic Chemicals" includes a section on 56 new research chemicals and data on more than 320 products. Among the new chemicals are: synthetic alpha-picoline, diethoxy tetrahydrofuran, a source of succinaldehyde, and four new vinyl monomers. Condensed data on applications are presented and physical properties are given in tabular form. Request Booklet F-6136, Carbide and Carbon Chemicals Co., 30 East 42nd St., New York 17, N.Y.

Sulfanole KB-40

New brochure describes Sulfanole KB-40, an all-purpose surfactant of the alkyl aryl sulfonate class. In addition to chemical and physical properties, a wide range of suggested applications is given. Sales Manager, Industrial Surfactants, Warwick Chemical Co., 10-10 44th Ave., Long Island City 1, N.Y.

Ion Exclusion

10-p. bulletin describes ion exclusion, the new principle for separating a nonionic substance from an ionic substance in a solution. This process offers a method of removing acids, salts, bases and ionic impurities in general from less highly ionized materials. The Dow Chemical Co., Midland, Mich.

N-Methylglucamine

4-p. technical data sheet on new polyhydroxyamine, N-methylglucamine. Recently made available in experimental quantities, preliminary studies on this chemical indicate a number of new and useful applications in the synthesis of surface-active agents, pharmaceuticals, dyeing assistants and others fields. Commercial Solvents Corp., 260 Madison Ave., New York 16, N.Y.

Equipment

Flexible Tubing

8-p. bulletin describes flexible tubing for ventilation, fume and dust removal, and materials handling. Detailed information is given on Spiratube A and Spiratube R, two types of highly flexible lightweight tubing made from helical coils of spring wire wound with overlapping plies of specially multi-coated fabric. Also described is Flexiflyte, smaller-diameter tubing for the same uses as Spiratube. Specifications, air friction charts, data on oil and chemical resistance, and application information is included. Flexible Tubing Corp., Guilford, Conn.

Purifiers

8-p. booklet describes Hi-eF type purifiers, and tells how these mechanical separators clean up steam, vapor, compressed air and gases by removing 99% of objectionable entrainment. Installation

photos show equipment arrangements and a blueprint drawing shows piping layouts. The V. D. Anderson Co., 1935 West 96th St., Cleveland 2, O.

Pumps

6-p. bulletin entitled "Vertical Pumps for Volatile Fluids" describes advantages claimed for vertical turbine pumps in handling gasoline, diesel fuel, crude oil, L-P gases, ammonia and other volatile fluids. Illustrated with cross-section drawings. Johnston Pump Co., 3272 East Foothill Blvd., Pasadena 8, Calif.

Compressors

44-p. catalog provides basic application data with design specifications on line of reciprocating compressors from 100 to 5,000 horsepower. Wide range of applications include foundries, drug and chemical industries, and refineries and petrochemical plants. Described in the bulletin are the Type EM, Type FM, and Type JM multi-stage and multi-cylinder units. Request Bulletin M-70 on company letterhead, Dept. G-3, The Cooper-Bessemer Corp., Mount Vernon, O.

Embedment Resin

8-p. booklet describes new industrial technique, embedding electrical components in "Scotchcast" brand electrical insulating resins. Minnesota Mining & Mfg. Co., 900 Fauquier St., St. Paul 6, Minn.

CHEMICAL WEEK • ADVERTISER'S INDEX • DECEMBER 6, 1952

AMERICAN BRITISH CHEMICAL SUPPLIES, INC.	6	HARDESTY CHEMICAL CO., INC.	1	UNION CARBIDE & CARBON CORP. CARBIDE & CARBON CHEMICALS CO.	T24
Agency—Richard Lewis, Adv.		Agency—Terrill, Belknap, Marsh, Associates		Agency—J. M. Mathes, Inc.	
AMERICAN POTASH & CHEMICAL CORP. B32		HARTE CO., JOHN J.	33	U. S. POTASH & CHEMICAL CORP.	B38
Agency—Charles W. Curtis, Adv.		Agency—Moseley, George & Woolen, Adv.		Agency—McCann-Erickson, Inc.	
ARCHER-DANIELS-MIDLAND CO.	29	INLAND STEEL CONTAINER CO.	46	U. S. STEEL CO.	8
Agency—The Bayles-Rort Co.		Agency—Weiss & Geller, Inc.		Agency—Batten, Barton, Durstine & Osborn, Inc.	
ATLAS POWDER CO.	37	INTERNATIONAL MINERALS & CHEMICALS CORP.	21	WARWICK CHEMICAL CO.	23
Agency—The Aitkin-Kynett Co.		Agency—C. Franklin Brown, Inc.		Agency—Ben Sackheim, Inc.	
BALTIMORE & OHIO RAILROAD	23	KENNEDY CAR LINER & BAG CO., INC.	40	WELCH, HOLME & CLARK CO., INC.	T44
Agency—The Richard A. Foley Adv. Agency, Inc.		Agency—Helms & Co., Inc.		Agency—Byrde, Richard & Pound, Adv.	
CARBIDE & CARBON CHEMICALS CO., A DIVISION OF UNION CARBIDE & CARBON CORP.	T24	MAAS CHEMICAL CO., A. R.	2	WIEGAND CO., EDWIN L.	30
Agency—J. M. Mathes, Inc.		MARINE MAGNESIUM PRODUCTS	B42	Agency—Smith, Taylor & Jenkins, Inc.	
CELANESE CORP. OF AMERICA	26, 27	Agency—Long Advertising Service		WYANDOTTE CHEMICAL CORP.	56
Agency—Ellington & Co., Inc.		MICHEL & CO., INC., M.	T42	Agency—Brooks, Smith, French & Dorrance, Inc.	
COMMERCIAL SOLVENTS CORP.	17	MICHIGAN CHEMICAL CORP.	41	WYSSMONT CO.	T32
Agency—Fuller & Smith & Ross, Inc.		Agency—Wesley Aves & Assoc.		Agency—Raf Advertising, Inc.	
CORN PRODUCTS REFINING CO.	T51	MONSANTO CHEMICAL CO.	9	ADVERTISING STAFF	
Agency—J. Hayden Twiss, Advertising		Agency—Gardner Adv. Co.		ADVERTISING SALES MGR., B. E. Sawyer	
DAVISON CHEMICAL CORP., THE	35	NOPOCO CHEMICAL CO.	45	BUSINESS MANAGER, Albert E. Weis	
Agency—St. George & Keys, Inc.		Agency—Lewin, Williams & Seylor, Inc.		Atlanta 3, Ralph C. Maultsby, 1321	
DEGEN & CO., INC., GEORGE	B51	OIL & CHEMICAL PRODUCTS CO., INC.	18	Rhodes-Haverty Bldg., Walnut 5778-2383	
Agency—St. George & Keys, Inc.		Agency—Byrde, Richard & Pound		Chicago 11, Alfred D. Becker, Jr.	
DOW CHEMICAL CO., THE	19	PELAMAY PRODUCTS	B32	Steven J. Shaw, 520 N. Michigan Ave.	
Agency—MacManus, John & Adams, Inc.		Agency—Martin L. Smith Co., Adv.		Whitehall 4-7900	
DUPONT DE NEMOURS & CO., INC., E. I. 38, 39		PERKIN ELMER CORP., THE	55	Cleveland 15, Vaughan K. Dissette,	
Agency—Batten, Barton, Durstine & Osborn, Inc.		Agency—Fred Wittner		1510 Hanna Bldg., Superior 7000	
EASTMAN ORGANIC CHEMICALS, DIV. EASTMAN KODAK CO.	T36	QUAKER OATS CO., THE	3	Dallas 1, James Cash, First National	
Agency—Charles L. Rumrill & Co., Inc.		Agency—Rogers & Smith Adv.		Bank Bldg., Prospect 7-4064	
EMERY INDUSTRIES, INC.	43	ROSENTHAL-BERCOW CO., INC.	B44	Los Angeles 17, Jos. H. Allen, 1111	
Agency—Ruhrauff & Hyman, Inc.		RUMFORD CHEMICAL WORKS	29	Wilshire Blvd., Michigan 3691	
EMPIRE TRUST CO.	T34	Agency—James Thomas Chirug Co.		New York 36, Knox Armstrong,	
ESSO STANDARD OIL CO.	10	SAULT STE. MARIE CITIZENS' INDUSTRIAL COMMISSION	28	Robert S. Muller, L. Charles Todaro,	
Agency—McCann-Erickson, Inc.		Agency—W. T. Sorensen & Assoc., Inc.		330 West 42 St., Longacre 4-3000	
FILTRROL CORP.	22	SOLVAY PROCESS DIVISION, ALLIED CHEMICAL & DYE CORP.	2nd Cover	Philadelphia 3, William B. Hannum, Jr.,	
Agency—Helmut & Co., Inc.		Agency—Atherton & Currier, Inc.		Architects Bldg., 17th & Sansom Sts.,	
FORKE BROS.	B34	STAUFFER CHEMICAL CO.	31	Rittenhouse 6-0670	
Agency—Ayres & Assoc., Inc.		Agency—J. Hayden Twiss, Advertising		San Francisco 4, Ralph E. Dorland,	
GENERAL CHEMICAL DIVISION, ALLIED CHEMICAL & DYE CORP.	Back Cover	TAYLOR-WHARTON IRON & STEEL CO., THE	T32	68 Post St., Douglas 2-4600	
Agency—Atherton & Currier, Inc.		Agency—A. B. Bicknauer		Boston 16, 350 Park Square Building,	
GLYCO PRODUCTS, INC.	4	TENNESSEE CORP.	B24	Hubbard 2-7160	
Agency—Sterling Adv. Agency		Agency—Crawford & Porter, Inc.		Detroit 26, 856 Penobscot Bldg.,	
HALL CO., THE C. P.	16	UNION BAG & PAPER CORP.	3rd Cover	Woodward 2-1793	
Agency—Crittenden & Eger, Adv.		Agency—Smith, Hagel & Snyder, Inc.		Pittsburgh 22, 738 Oliver Bldg.,	
				Atlantic 1-4707	
				St. Louis 8, 3615 Olive St.,	
				Continental Bldg., Lucas 4867	



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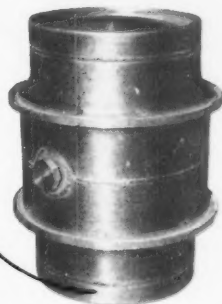
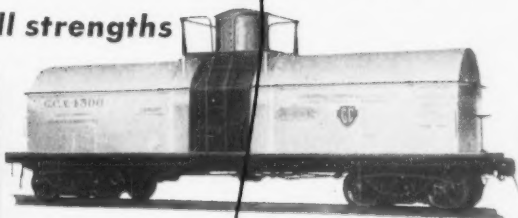
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